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Annual report  
1861

## APPENDIX.

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**Documents relating to the construction**  
**OF THE**  
**PARLIAMENTARY AND DEPARTMENTAL**  
**BUILDINGS AT OTTAWA.**

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**QUEBEC, 1862.**



To His Excellency the Right Honorable CHARLES STANLEY,  
Viscount Monck, Governor General of British North  
America, &c., &c., &c.

May it please Your Excellency,

The undersigned has the honor to lay before Your  
Excellency the Appendices relative to the Parliamentary  
and Departmental Buildings at Ottawa, referred to in the  
General Annual Report of the Department of Public Works  
for the year 1861.

Respectfully submitted,

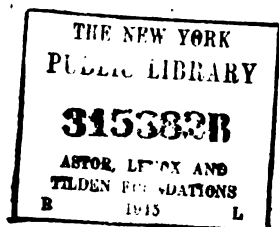
JOSEPH CAUCHON,

*Commissioner of Public Works.*

Department of Public Works,  
Québec, 20th April, 1862.







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DOCUMENTS RELATING TO THE CONSTRUCTION

OF THE

# PARLIAMENTARY AND DEPARTMENTAL BUILDINGS AT OTTAWA.

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No. 1.

*Meery Pub. Works  
to F. P. Munbridge.  
19060.*

DEPARTMENT OF PUBLIC WORKS,

Toronto, 28th March, 1856.

SIR,

This Department has been called upon for approximate estimates of the cost of erecting the necessary permanent Buildings for the accommodation of His Excellency the Governor General, the two branches of the Legislature, and the several Public Departments, whether at or near the cities of Toronto, Kingston, Ottawa, Montreal, or Quebec.

The Commissioners are, of course, aware that the preparation of *bonâ fide* detailed estimates for such extensive buildings would require a considerable length of time ; but being anxious to furnish, as soon as

possible, the information called for by the House of Assembly, and believing that from your own experience, and the means which the records of the office afford, you can prepare such estimates as will answer the object at present in view, I am directed to request that you will forthwith proceed to do so.

The estimates prepared about two years since by Messrs. Cumberland and Storm, for the erection of such buildings, and which amounted to £122,745, will not be a safe guide, as, independent of strong objections raised to them at the time with respect to security from fire not being sufficiently provided for, items of considerable importance and which would necessarily involve a large expenditure are wholly omitted,—such as main sewerage, heating, lighting, fencing, road-making, barracks, lodges, &c., &c.; still, by comparing them with the various estimates for Public Buildings lately acquired by the Department, you will be enabled to furnish estimates sufficiently reliable, and such as will meet the views of the Legislature.

I am,

Sir,

Your obedient servant,

(Signed) THOMAS A. BEGLY,

Secretary.

F. P. Rubidge Esq., &c., &c.

Public Works Office.

**No. 14.****29633.**

OFFICE OF PUBLIC WORKS,

Toronto, March 29th, 1856.

Thomas A. Begly, Esq.,  
Secretary.

SIR,

Upon the subject of the proposed Government Edifices, and their probable cost in different localities, I have the honor to report as follows:—

Estimates of the cost of erecting the Executive and Parliamentary Buildings upon a scale of equal comparison in the Cities of Toronto, Kingston, Ottawa, Montreal, and Quebec, from the short-time given to prepare them in, must necessarily be only approximate calculations, or what are termed *General Estimates*. The Department of Public Works having possession of data relative to Provincial Edifices either recently erected or now proposed for construction, are enabled to submit the probable amount required for carrying into effect the intentions of the Government and Legislature with reference to the contemplated Public Buildings.

Apart from the question of site at the several localities recommended, it is believed that the advantages possessed by each of these Cities and their immediate vicinities, in respect to suitable building material and labor, are nearly upon a par ; or at least such that contractors doing a large business would be found willing to put up structures so extensive in scale, upon similar terms and for the same bulk-sum, at either of the places indicated. Exception perhaps would be taken to Toronto on one item, namely the great cost of building-stone, and the distance at which it has to be procured ; Toronto being chiefly dependent on the Hamilton, Queenston, and Ohio quarries, for this material.

The designs furnished by Messrs. Cumberland and Storm in 1854, for the Government Edifices in Toronto, shew a combination of *brick* and *stone* for the exterior walls ; and this arrangement, it is considered, would

contrast fairly with outside walls wholly of stone in the other cities. This combination therefore of *brick* and *stone* in Toronto, and *entirely stone in the other localities*, for outside faced work, is assumed as forming an equal basis of calculation for each and all the sites. The various arrangements, dimensions, and extent of accommodation furnished in the Toronto plans alluded to, are likewise held to be suitable and sufficient for the purposes required elsewhere.

The Commissioners of Public Works have recently erected and completed a very extensive building in cut-stone masonry, known as the New Court-House, Montreal, the expenditure upon which, upon the well known approximate method of computing the cubic contents of the interior, gives the sum of 8½ pence per cubic foot. This result is somewhat excessive, owing to changes in plans, and delays, with the consequent claims therefor ; including also the cost of fitting up and furnishing the interior. They have likewise at the present time under their notice 15 competition plans and estimates for a New Custom House in Quebec, the cost of which buildings by the several Architects is made to range from 5d. to 9d. per cubic foot ; and striking the average of twelve of these estimates, it amounts to say 6¼d., which I assume to be as nearly correct as possible, and applicable to the Provincial Edifices proposed to be built in the cities afore-enumerated.

The estimates submitted with the Toronto designs in 1854 by Messrs. Cumberland and Storm are as follows :

Parliament Buildings . . . . .	£51,592. 0. 0
Departmental Offices . . , . .	49,553. 0. 0
Government House and Offices . . . . .	21,600. 0. 0
	<hr/>
	£122,745. 0. 0
Lodges, Barracks, Guard House, Fencing, Planting Grounds, Drainage, &c. . . . .	11,000. 0. 0
	<hr/>
	£133,745. 0. 0

The cost of Ventilating and Heating, laying on Gas fixtures and Water-pipes, and interior furnishing, *not* however included in the above sum.

Cubing, therefore, the interior dimensions of the Buildings planned for Toronto, as a comparison with the other estimates remarked upon, there

results, at the foregoing valuations of the Architects, that the Legislative Buildings would cost, say : . . . . . 3½d. per foot cube,

Public Departments . . . . . 3½d. " " "

Governor's Residence and Offices . . . . . 3½d. " " "

This investigation will make it clearly apparent that if Public Buildings in Toronto or elsewhere cost, say 6½d. per foot, consequently 3½d., submitted as their outlay, must be considered an *under estimate*.

Assuming therefore the more reliable rate of 6d., the cost would become :

For Parliament Buildings . . . . .	£92,439. 4. 0	
And adding 1d. per foot for Heating, Ventilating, Gas, Water, Fixtures and Fittings, &c. . . . .	£15,406.10. 8	
	<hr/>	£107,845.14. 8
Public Departments at 6d. per foot. . . . .	£76,524. 5. 0	
Add 1d. for Heating, &c., as above . . . . .	£12,754. 0.10	
	<hr/>	£ 89,278. 5.10
Governor's Residence and Offices, 6d. per foot . . . . .	£37,028.11. 6	
Add 1d. for Heating, &c., as above . . . . .	£ 6,171.12. 9	
	<hr/>	£ 43,200. 4. 3
Fencing, Road-making, Lodges, Barracks, Guard House, Planting, and Drainage, as before. . . . .	£ 11,000. 0. 0	
	<hr/>	
Total cost . . . . .	£251,324. 4. 9	

I have the honor to be,

Sir,

Your obedient humble Servant,

F. P. RUBIDGE,

A. E. P. W.

#### ADDENDA TO REPORT OF MARCH 29th 1856.

It is necessary here to remark that the foregoing expenditure does not contemplate any other precautionary measures against fire than the ordinary modes of construction in timber flooring and roof &c. If required to submit a sum for erecting these buildings to resist conflagration, with all the modern appliances of science and skill to render them *Fire Proof*

with non-combustible materials :—it would then be requisite to give, as a final outlay, (and any less sum would probably be deceiving the Government and Legislature) a further sum of 1d. per foot cube, or 15 per cent upon the total, making 8d. per foot. Adding, therefore, the amount of

Fire-Proofing . . . . .	£ 34,332. 4. 2
To the cost without do . . . . .	251,324. 4. 9

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Grand total becomes . . . £285,656. 8.11

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Respecting the ground sites in the several cities ; The land in Toronto is already provided by the Provincial Government. In Kingston, the property purchased by the Government from the Murney's Estate is also applicable.

In Ottawa City, probably a part of the Ordnance Lands to be made over to the Province, would be found suitable.

At Montreal a site would have to be acquired ; but the proceeds of the sale of the very valuable property held by the Government in the vicinity of Jacques Cartier Square and Notre Dame Street, would go far towards any fresh purchase elsewhere.

Lastly, in Quebec, the Government have sufficient ground adjacent to the old Chateau and Garden for the Public Edifices ; or they might obtain other eligible sites under favorable conditions in exchange for the Spencer Wood property, if deemed advisable.

I have the honor to be,

Sir,

Your obedient humble servant.

(Signed) F. P. RUBIDGE,  
A. E. P. W.

**No. 2.**

**40935.**

OFFICE OF PUBLIC WORKS,

Toronto, May 3rd, 1859.

The Honorable Commissioner  
of Public Works,

SIR,

Upon the 29th March, 1856, I had the honor of submitting the accompanying Report upon the probable cost of the proposed Public Edifices, for Legislative and Departmental purposes, of the Provincial Government, based upon the Drawings and Plans, with their extent of

accommodation, prepared by Messrs. Cumberland and Storm, whose estimate for the whole amounted to £133,745. Heating, Ventilation, Gas fixtures, Water-pipes and interior furnishing, superintending, &c., are, however, not included in the above sum.

Upon comparing this Estimate with the outlay incurred under the Commissioners for certain large Public Edifices, and also contrasting it with Estimates from Architects in different parts of the Province for other Public Buildings, as well as from experience of the fact how largely the Actual Expenditure exceeds the first Estimates, I considered that the gross sum above stated would be much under the eventual outlay.

The Report of the 29th March, 1856, sets forth : That the approximate cost of these Buildings, according to the Estimate of the Toronto Architects, would be at the rate of say 3½d. per cube foot of the interior dimensions ; whereas the assumed cost of these Buildings from data submitted, is taken to be 6½d., and adding a further sum for wants not included in the original Estimate, the total outlay of these Public Edifices is put at the safer but much larger amount of £251,324. 4. 9, or say two hundred and fifty thousand pounds, currency, a sum which, I believe, would not be found more than sufficient to erect these Public Buildings in a substantial and creditable manner.

I have the honor to be,

Sir,

Your obedient humble Servant,

(Signed,) F. P. RUBIDGE,

A. E. P. W.

No. 3.

### NOTICE TO ARCHITECTS.

DEPARTMENT OF PUBLIC WORKS,

Toronto, May 7th, 1859.

Plans and Designs for the several Public Buildings proposed to be erected in the City of Ottawa, addressed to the Honble. Commissioner of Public Works, will be received up to the FIRST DAY OF AUGUST NEXT, at the Office of the Department of Public Works.

They are to comprise :—

1st. Elevations, Plans, Sections, longitudinal and transverse, Specification and estimate of Buildings for the Provincial Parliament and Library, the latter to be fire-proof.



2nd. Elevations, Plans, and Sections, with Specification and estimate of the Buildings for the Public Departments.

3rd. Elevations, Plans, and Sections, with Specification and estimate of the residence for the Governor General, with all the requisite out-offices, &c.

4th. For the most approved sets of designs for the Parliament Buildings, £250 will be awarded as the first Premium, and £100 as the second.

For the Public Departments, £250 will be awarded as the first Premium, and £100 as the second.

For the Government House, £100 will be awarded as the first Premium, and £50 as the second.

The plans selected to become the property of the Commissioner of Public Works.

The above Edifices are proposed to be built in a plain substantial style of Architecture, of coursed hammer-dressed masonry, with neatly pointed joints, and cut stone quoins, window dressings, cornices and entablatures; the material being found in the vicinity of the City of Ottawa. Interior walls to be of brick-work.

The Commissioner of Public Works, with a due regard to ample accommodation and the most approved arrangements for ventilation and heating, limits the expenditure on these Public Edifices to the following outlay;—

For Parliament House. . . . .	: \$300,000
For Departmental Buildings . . . . .	240,000
Government House and Offices. . . . .	100,000

Due provision to be made for the supply of water, Gas, &c., &c., &c.

The drawings are to have a motto attached thereto, accompanied by a sealed envelope containing the name and address of the competitor; only to be opened upon a selection of the designs answering to the motto aforesaid.

All information as to the sites for the Buildings, their sizes, the number of rooms, &c., &c., &c., necessary to the preparation of the Plans, can be obtained at the Office of the Department.

(Signed,) JOHN ROSE,

Commissioner of Public Works.

## No. 4.

## DEPARTMENT OF PUBLIC WORKS,

11th May, 1859.

STATEMENT of accommodation required for the Legislative Buildings, the Government Departments, and the Residence of His Excellency the Governor General, not including basement stories, living rooms, corridors, passages, vaults, out buildings, &c., &c.; for the guidance of Architects preparing Competition Plans, in addition to the information given in the published Notice.

BUILDING OR DEPARTMENT.	No. of Offices required.	Superficial area, square feet about.	REMARKS.
Governor General and Staff...	6	2500	The site selected for the Parliament buildings and the Departments is that known as Barrack or Fortification Hill, in the City of Ottawa. The extent of ground suitable for building purposes being about 25 acres. The Parliament Block to occupy a prominent position near the bank of the Ottawa River, the Departments to form flank Buildings removed as far distant from the former as the extent of ground will admit of. The foundations of the Buildings will be in rock excavation. The Plan of the ground can be seen at the Office of the Department or upon the published lithographed plans of the City of Ottawa. The Parliamentary Library and the Provincial Registrar's Records to be in fire-proof apartments. The same kind of protection extended to the other Buildings, as far as the limited expenditure will admit of. For particulars in reference to the Parliamentary Library, parties are referred to the Librarian of the Legislative Assembly, Mr. Alpheus Todd. The Offices for the Minister of Finance, the Crown Lands, the Public Works, and Post Master General, are to be grouped in one suite, and the other Public offices in another.
Executive Council.....	15	5000	
Indian Department.....	4	1200	
Provincial Secretary.....	12	3500	
Crown Law Officers.....	9	2750	
Provincial Registrar.....	4	1200	
Adjutant General of Militia...	12	2500	
Bureau of Agriculture.....	8	4000	
Public Works.....	15	5000	
Crown Lands and Woods and Forests.....	30	11000	
Finance Minister, (Inspector General).....	10	3000	
Customs Branch.....	8	2750	
Audit Branch.....	6	1800	
Receiver General.....	11	3000	
Post-Master General.....	20	6500	
Legislative Buildings :			
Council Chamber.....	1	4000	
Hall of Assembly.....	1	4000	
Lobbies.....		3000	
Picture gallery.....		2500	
Library.....		6500	
Reading rooms, wardrobes, Speakers' apartments, Com- mittee rooms, Clerks' rooms &c., &c.....	85	35000	
Governor General's Residence; state rooms, ball room, dining room, drawing r'm, Library, private apartments, &c., &c.....	40	18000	
Domestic offices.....	35	8500	

No. 5.

1901.

## DEPARTMENT OF PUBLIC WORKS.

25th. August, 1859.

To His Excellency the Right Honorable Sir EDMUND WALKER HEAD, Baronet,  
Governor General, &c., &c., &c., &c.

The undersigned has the honor to report for Your Excellency's information, that in pursuance of public notice of the 7th May last, this Department has received thirty-three separate designs for the Public Buildings in Ottawa, submitted by eighteen Architects, of whom one resides in the city of New-York, and the rest in Canada.

For the Parliamentary Buildings there are sixteen designs by fourteen competitors, ten of which are either of the Classic or Italian, and six of the Norman or Gothic Styles.

For the Departmental Buildings, four are Classic and three Gothic, making seven designs by six competitors.

For the Governor General's residence there are ten designs submitted by ten competitors.

These designs are all at present displayed in the east wing of the Parliament Buildings in this city, and arranged on the walls for convenient inspection. Many of them evince great taste and skill, and are highly creditable to the Architectural profession of this Province, especially when it is considered that it was limited both in time and expense in their production.

The undersigned, assisted by the Architect of this Department, has devoted the past week to a critical examination and analysis of the respective merits of these several designs; and now begs respectfully to submit the result, to assist Your Excellency in making a selection of such as are deserving of the first and second premiums, and of being adopted for execution.

In an investigation of this character, where the merits and demerits of the designs are so various, it has been found advantageous and indeed indispensable, for arriving at a fair discrimination, to divide the respective requirements under ten or more separate heads (as for instance, fitness of plan, economy of construction, adaptation to climate, to position, to local material, &c., &c.,) and to apply to each a modulus of ten points or marks of merit, and to assign to each a certain number, in the order in which they respectively stand; and the aggregate for each design should, by its highest number or most merit marks, fairly determine which of them is best upon the whole.

The Architect's report, accompanied by Schedules 1, 2, and 3 (\*) and by the printed notice and conditions, is herewith submitted for Your Excellency's information, but the undersigned begs respectfully to add that he does not entirely agree with him in the assignment of the marks of merits, and has therefore given in red ink (†) on his Schedules, the judgments which he, the undersigned, has formed from his personal examination of the plans.

According to the best of his judgment, assisted by the modulus of comparison above described, the undersigned would venture respectfully to recommend to the favourable consideration of Your Excellency, the following designs, as possessing, upon the whole, the highest degree of merit :

FOR PARLIAMENTARY BUILDINGS.

- First,—« *Semper Paratus* » . . . . . Civil Gothic Style.  
 Second,—« *Stat nomen in umbra* » . . . . . do.

FOR DEPARTMENTAL BUILDINGS.

- First,—« *Stat nomen in umbra* » . . . . . Civil Gothic Style.  
 Second,—« *Semper Paratus* » . . . . . do.

FOR GOVERNMENT HOUSE.

- First,—« *Semper Paratus* » . . . . . Grecian.  
 Second,—« *Odahwah* » . . . . . Norman.

There is great unity of design in the plans submitted for the Parliamentary Buildings by « *Semper Paratus* », and, for the great public uses for which they are designed, they represent a dignified and appropriate edifice. The arrangements are convenient and the accommodation ample, exceeding that called for by the printed conditions. Owing doubtless, however, to its hasty preparation, it is not devoid of some serious defects, but these can all be readily overcome by re-arrangement of the basement plan, and then it would become a very suitable design for adoption, provided it can be executed within the limits of the Estimate, which is £75,000. On this point the Architect has volunteered a tender, herewith submitted, from responsible contractors, backed by ample security, in confirmation of the correctness of his calculations.

The undersigned estimates the cost of this plan at £90,000 ; but it is not impossible that the keen competition which the letting of these works must create, together with the facility of construction at Ottawa, might induce parties to take the work at much lower prices than the undersigned has heretofore been accustomed to base his estimates upon.

(\*) Schedule No 3, refers to Governor's residence, (not printed.)

(†) See note on schedule.

The design of « *Stat nomen in umbra* » for the Departmental Buildings is in the same style as, though of somewhat different expression from the one just referred to for the Parliamentary Buildings, and will harmonize with it. The undersigned considers it a handsome and appropriate building, without being expensive ; affording sufficient accommodation, and very well arranged for the transaction of public business. The undersigned would, however, prefer an arrangement which would get rid of the closed courts, and sees no difficulty in its accomplishment. The Architect's estimate is £55,000, or £5,000 less than the sum to which it was limited in the printed conditions. The undersigned estimates the cost at £60,000.

For the Government House there are only two designs at all worthy of consideration, and neither of these, from obvious defects, would the undersigned recommend Your Excellency to adopt. The arrangement contemplated by « *Semper Paratus* », of providing accommodation for the domestics and kitchen in the basement of the building is inadmissible, while it would appear that the skylight roofing of both of this and the plan submitted by « *Odahwah* » is impossible in the way in which they are represented. They are, however, both handsome designs, and might be modified to suit Your Excellency's wishes ; but it is not likely that either of them could be built at less than fifty per cent above the Architect's estimate of £25,000.

Respectfully submitted,

(Signed,) S. KEEFER,  
Deputy Commissioner.

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No. 5½.

TORONTO, August 23rd., 1859.

F. P. Rubidge to  
S. Keefer.  
42087½

Samuel Keefer, Esquire,  
Deputy Commissioner,  
Sir,

Upon the competition designs for the Public Buildings to be erected in the city of Ottawa, I have the honor to submit the following remarks and statements, premising that although they furnish only an individual opinion of the respective merits of the plans in question, that opinion is arrived at without bias or preference of any kind beyond what the drawings give rise to.

I need not comment upon the excellence of so many fine designs and examples of skilful draughtmanship; nevertheless, owing probably to the limited time for getting up so many creditable competition drawings, I could not assert that any one sett of plans so completely answered the requirements, that they could be carried into immediate execution, in preference to others and without revision of any sort.

An impression prevails that an edifice of the sternest architectural style is best adapted to the site and vicinity : I do not support this view, and think it would eventually be found a mistake to erect a gloomy pile of buildings for Legislative purposes on so commanding a situation.

A synopsis or abstract of the drawings furnished shews that there are sixteen designs for Parliament Buildings sent in by fourteen competitors, of which ten are either in the Classic or Italian, and six in the Norman or Gothic styles of architecture.

For Departmental Buildings, four are Classic and three Gothic, making seven designs submitted by six competitors.

And for the Governor General's residence there are ten designs submitted by ten competitors.

The total being thirty-three separate designs from thirty hands; but as some parties supply two and three designs each, the total number of Architects submitting designs is but eighteen, out of which number seventeen, I believe, reside in Canada, and the remaining one in New-York.

Upon examining the several designs and plans it was found that upon many points the relative merits and defects were so conflicting, that a tabulated scheme of comparison was resorted to, of which the modulus of superiority was taken to be the number 10. Upon this principle I have submitted the accompanying schedules.

1, 2, 3. (†)—The aggregate of each column shewing the claim to excellence pertaining to the motto above.

Thus « *Stat Nomen* » shews a high claim for « beauty of design » and a medium one for interior arrangement ; « *Odawah* » is exactly the reverse of this ; while « *Semper Paratus* » takes high figures in both requirements, but counts low on the score of cost and safety against fire from the number and position of boilers, &c.

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(†) Schedule No. 3, refers to Governor's residence (not printed).

I trust this method of balancing merits and defects, which is not an unusual one in Europe, may be deemed the most satisfactory.

Before any premium is paid over to the successful Architect, I am of opinion, he should be called upon to draw up a working specification other than, in most instances, the mere *description* furnished with his competition plans ; so that the Honble. Commissioner of Public Works may be prepared to advertize the work if he thought proper.

I have the honor to be,

Sir,

Your most obedient humble servant,

(Signed) F. P. RUBIDGE, A. E. P. W.

Samuel Keefer, Esquire,

Deputy Commissioner.







**No. 6.****1902.**

DEPARTMENT OF PUBLIC WORKS,

27th August, 1859.

To His Excellency the Right Honorable Sir EDMUND WALKER HEAD, Baronet,  
Governor General, &c., &c., &c.

In further reference to the competition designs for the Public Buildings at Ottawa, the undersigned has the honor, in compliance with Your Excellency's memorandum, received yesterday, to submit the following report as supplementary to the Departmental Report thereon of the 25th instant.

The undersigned regrets that the difference of opinion which exists between the Architect of this Department and himself with respect to these plans, has rendered it impossible for Your Excellency to arrive at a conclusion on the relative merits of the designs ; and in reference to this object it is also to be regretted that the exigencies of Public service have rendered it necessary that Mr. Rubidge should return to Quebec to attend to the works in progress there ; but the undersigned is not without hope that the observations he has yet to make upon those designs, will enable Your Excellency to make a satisfactory selection of such as are entitled to the premium, and suitable to be submitted for tender.

In entering upon this duty, the undersigned, in his first report, was desirous of arriving at a conclusion without drawing invidious comparisons between the different competitors, and therefore gave expression to his views by a system of numbers ; but recognising the perfect justness of the remarks contained in Your Excellency's memorandum, with respect to the erroneous nature of some of the points of comparison, the undersigned, in compliance with Your Excellency's instructions, would respectfully observe, and believes it will be readily admitted, that the real competition for all the Buildings rests between the three sets of designs which are produced by

« *Semper Paratus* »,

« *Stat nomen in umbra* », and

« *Odahwah*. »

For the Parliamentary Buildings, the Plan of « *Odahwah* » is apparently inadmissible on account of its cost. The Architect having furnished no detailed estimate whereon to base an opinion, it has been necessary to make one from the cubic contents, which affords a very safe approximation. This design contains 4,500,000 cubic feet, which at six pence per cubic foot, a moderate estimate, would make the cost £112,500, or £37,500 more than the sum stated in the conditions.

To the undersigned it appears that there are other grave objections to

this design beside the question of cost. For, however much it might be adapted to the scenery, it possesses neither truth nor beauty,—and the heavy castellated style in which it is conceived, renders it prison-like and defiant in its aspect, and therefore unsuited to become the seat from whence should emanate the laws of a free country. In regard to the Library placed within the great tower, the circle within the square at once increases the expense and diminishes the amount of accommodation ; while its union with the Houses and surrounding offices diminishes the opportunity of lighting it. The flat roof and parapet is a trap for the snow, and so is the valley on the north side ; both of which are faults of a serious nature. The arrangement of the accommodation on three floors instead of two, and placing the Houses on the middle floor, will be inconvenient for the transaction of public business. There are likewise several hundred feet of dark passages in it.

It would therefore appear that the choice is limited to the two former, « *Semper Paratus* » and « *Stat nomen in umbra* », and it only remains to determine which stands first.

In support of the preference already shewn by the undersigned to the former, it is to be observed in respect to « *Stat nomen in umbra* » that 1st. The Houses are placed on the first floor instead of being on the ground floor, and 2nd. that they have galleries for the Public around them which are *within* instead of being *without* the body of the House : an arrangement which is not only inconvenient, but is considered inadmissible. 3rd. The chambers are 54 feet in height with pointed open roof and heavy hammer beams which will prevent hearing. 4th. No elevation or section is given of the circular library (shewn on the rider plan on which the estimate is based), by which to judge of its appearance. 5th. There are several valleys where the snow will lodge and injure the building. 6th. The boilers for the heating are within the body of the building. And 7th. finally its conventual and collegiate appearance seems rather to associate it with the business of devotion and learning, than with purposes of Legislation. In itself it is a handsome object, but scarcely suitable to the position, the scenery, or the uses for which it is designed. The Architect has furnished no detailed estimate, but has stated the cost to be £80,000, which is £5000 in excess of the conditions. As a check upon this, its entire contents have been taken, which amount to 3,000,000 cubic feet, which at six pence a cubic foot gives £75,000 as its probable cost by this method of calculation, and therefore within the conditions.

The plan of « *Semper Paratus* », as before stated, has some defects,

but none of so serious a nature as those just enumerated ;—like the former, the boilers are placed *within* the walls of the building, and some of the walls on the ground floor are without support in the basement, but it is considered that these are mere errors of hasty composition which can easily be corrected. The rooms and corridors are well lighted and convenient. The two Houses are on the ground floor, and ample accommodation is provided for the Public, for ex-members, and for the reporters, in galleries that are placed *without* the body of the House. The undersigned considers the accommodation and arrangement of this design more complete than any, while its handsome palatial appearance brings it in harmony with the position and the scenery, and renders it an appropriate edifice for the purposes of Legislation. The Architects not having furnished a detailed estimate, one has been made from the cubic contents, which is 3,600,000 cubic feet, which at six pence a foot will make the cost £90,000, or £15,000 in excess of the conditions. But on this point there is the tender of Ginty & Co., volunteered by the Architects in support of the estimate.

Considering this to stand highest in the order of merit, and to be the best suited for adoption, the undersigned would respectfully submit for Your Excellency's consideration, that the first premium be awarded to it, provided the Architects furnish a detailed specification and estimate, and modify the plan under the direction of this Department, and that the work be let thereon to responsible contractors for the amount stated in the conditions.

« *Semper Paratus* » contains, besides the two Houses

of Parliament, the halls, closets, &c., &c. . . . 110 Rooms,

*Stat nomen in umbra* » . . . . . 90 do.

« *Odahwah* » . . . . . 117 do.

The printed conditions called for only . . . . . 80 Rooms.

With regard to the Departmental Buildings, the only difference between Mr. Rubidge and the undersigned is in the design entitled to the second prize. In both of these the necessary accommodation is provided, and it is likely they can both be built within the assigned limit, and there is really very little choice between them.

The preference which the undersigned gave to « *Semper Paratus* » is owing chiefly to the want of proper light in the passages of « *Odahwah* ».

All of which is respectfully submitted for Your Excellency's consideration.

(Signed,) SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

**No. 7.** Copy of a Report of a Committee of the Honorable the Executive Council, dated 27th August, 1859, approved by His Excellency the Governor General in Council, on the 29th August, 1859.

On the Reports of the Deputy Commissioner of Public Works and of Mr. Rubidge, the Assistant Engineer of the Department, on the designs for the Parliament and Public Buildings at Ottawa.

The Committee respectfully recommend :

1st. That the first premium for the Parliament Buildings be awarded to the design with the motto « *Semper Paratus* », and that the second premium be awarded to the design with the motto « *Stat nomen in umbra* ».

2nd. That the first premium for the Public Departments be awarded to the design with the motto « *Stat nomen in umbra* », and the second premium to the design with the motto « *Semper Paratus* ».

3rd. That the first premium for the Government House be awarded to the design « *Odakwah* », and the second premium to the design « *Semper Paratus* ».

The Committee in this recommendation desire to express as their opinion that none of the designs referred to can be adopted without considerable modifications and improvements, and that the Prize Exhibitors be so informed.

Certified,

(Signed,) W. H. LEE.

To the Honorable the Commissioner  
of Public Works, &c., &c., &c.

**No. 8.** Copy of a Report of a Committee of the Honorable the Executive Council, dated the 1st September, 1859, approved by His Excellency the Governor General in Council, on the 2nd September, 1859.

Inasmuch as the plans for the several Public Buildings at Ottawa, to which the premiums were awarded by Your Excellency in Council on the 29th ultimo, are not thoroughly adapted to the purposes for which they are intended, as appears by the Report of the Deputy Commissioner and Assistant Engineer of Public Works, the Committee recommend that

the Architects who obtained the first premiums be respectively informed that though those premiums have been awarded, their plans will not necessarily be adopted unless they can be so altered as to be made satisfactory to the Government ; and that, therefore, if they desire to produce this result, they should repair to Quebec without loss of time, and confer with the Department of Public Works there; but without any charge to the Government.

Certified,

(Signed,) W. H. LEE,  
C. E. C.

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No. 9.

DEPARTMENT OF PUBLIC WORKS,

Quebec, 8th September, 1859.

PUBLIC BUILDINGS AT OTTAWA.

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NOTICE TO CONTRACTORS.

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Sealed tenders will be received at this Office until Tuesday the first day, of November next at noon, for the Erection of the Parliamentary and Departmental Buildings in the City of Ottawa, in accordance with the Plans and Specifications which may be seen on application at this Office, and at the Offices of the Architects in Ottawa and Toronto, on and after Saturday the Fifteenth day of October next.

For information relative to the Parliamentary Buildings, parties will apply to Messrs. Fuller and Jones, Architects, Ottawa and Toronto ; and in reference to the Departmental Buildings, to Messrs. Stent and Laver, Ottawa ; and for both, at this Office.

The Tenders are to be addressed to the « *Secretary of Public Works, Quebec* », and endorsed « *Tender for Public Buildings, Ottawa* », and to be signed by two or more responsible persons who are willing to become security for the due performance of the Contract. Printed forms of tender will be supplied, and no tender will be received unless in accordance with the form.

(Signed,) SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

**No. 10.****29062.**

DEPARTMENT OF PUBLIC WORKS,

Quebec, 9th September, 1859.

GENTLEMEN,

The order in Council of the 2nd instant having referred you to this Department for instructions relative to the modification required in your premiated plans for the Parliamentary Buildings at Ottawa, to adapt them more completely to the requirements of the Government, and keep the expenditure within the limit assigned for them, I have the honor to direct your attention to the following changes and alterations in those plans, necessary to secure these objects.

1st. To reduce the length of the front elevation about forty nine (49) feet, proportionably off the whole frontage.

2nd. Reduce the width of the corridors and galleries to eleven (11) throughout.

3rd. Reduce the length of the two houses about eight (8) feet each, leaving the width forty-five (45), as at present. This alteration with the change in the width of the corridors will have the effect of taking about ten (10) feet off the depth of the building, North and South.

4th. Dispense with the arcade across the Court leading to the Governor General's room, and shift that room to the other side.

5th. Omit the Speaker's and Librarian's residences.

6th. Raise the ground floor some two or three feet above the line represented on the elevation ; as well to give it more height as to reduce the quantity of rock excavation for the basement rooms and vaults.

7th. Re-arrange the walls in basement to afford proper support to those above ; and place the Kitchen, Saloons, and Dining Rooms in such positions as to receive the greatest amount of light and air.

8th. The area walls and railings to be omitted, when not absolutely required to afford light to basement rooms.

9th. Reduce the number of Boilers for heating to five (5), and place them in the areas without the main walls.

10th. Provide only four (4) Vaults for each House in the basement under the central part of the front.

11th. Omit the Barber's Rooms and Baths in the basements.

12th. No furniture to be provided.

13th. The ground floor of the two Houses, Lobbies and Corridors, where there are no Rooms or open spaces below, are to be made fire-proof and finished in a plain manner, either with cement, or with hollow brick

tiles laid on a bed of concrete; but when they are over Rooms or open spaces below, they will be either of oak on wooden joists, or cement on iron joists—(and tenders taken for both.)

14th. The first and second floors will be of wood.

15th. The interior finishing of the Walls in both Houses and in the Lobbies and Corridors, to be plain at present, but adapted to the reception of marble lining, should it be hereafter decided on.

16th. Omit the ornamental cresting on the apex of the roof and on the tops of the truncated roofs at each end of the front.

These are the principal points to which your attention is at present directed; and you are requested to have detailed Plans and Specifications, with form of tenders, all fully completed and ready for inspection and examination by parties desirous of tendering for the work, on or before the 15th. of October next, at Toronto, Ottawa, and Quebec.

It is requested that you will have these documents prepared by the 10th of October for the approval of this Department, before they are submitted to the public; and when so approved, the specifications and forms of tender to be printed.—A printed form of contract containing the conditions, is now enclosed for your information and guidance.

I am, &c.,

(Signed,) SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

Messrs. Fuller & Jones,  
Architects, &c., Toronto.

No. 11.

29103.

DEPARTMENT OF PUBLIC WORKS.

Quebec, 14th September, 1859.

GENTLEMEN,

The order in Council of the 2nd instant having referred you to this Department for instructions relative to the modifications required in your premiated Plans for the Departmental Buildings at Ottawa, in order to meet the requirements of the Government, and keep the expenditure within the limit assigned for them, I have the honor to direct your attention to the following alterations in those plans, necessary to secure these objects.



1st. In order to get rid of the open courts, each of the blocks is to be opened out, and disposed of in the form of an L, with one leg facing on the square and the other on Wellington Street.

2nd. For convenience of access to the rooms and for economy of heating, there is to be a central hall about nine (9) feet in breadth, with rooms on either side, which is to be lighted by vistas at each end, as well as by the entrance halls and stairs at the sides. It is particularly desired that the halls shall be well lighted.

3rd. Place the Boiler for heating purposes in the angle formed by the two sides of the Building, and let the chimney ascend from this angle.

4th. Both faces (on Wellington Street and on the Square) to be three (3) stories in height and of corresponding appearance.

5th. Alter the character of the windows to correspond in their general aspect with those of the Parliamentary Buildings, and get rid of the mullions.

6th. It is desirable, for appearance sake, to vary the designs of the two blocks on the East and West side of the Square, to adapt them to the different features of the ground, and so do away with the formality of two similar buildings.

7th. Increase the thickness of walls for strong rooms, and avoid putting fire places in them.

8th. The Water-closets to be outside of the main walls, as in the original drawing, or placed in such positions within them as not to become offensive to the occupants of the rooms.

9th. A valley is shown in the original elevation which should be avoided by joining the roof of the tower so as to prevent any lodgment of snow.

10th. The internal finishing to be plain and substantial, and Cornices to be put only in the principal Rooms and Halls.

11th. The tower at the angle of the block to be larger and higher than that shown in the original drawing, with a water tank at the top to put out fire.

A few copies of the blank forms of contract are sent herewith for your information, in regard to the general conditions of contracts with this Department.

It is required that the detailed Plans, Specifications, and forms of tender shall be ready for the inspection of parties desirous of tendering for the work by Saturday the 15th day of October next, and that they shall be submitted for the approval of this Department on or before the 10th day of October next : and for this object it is my intention to be at Ottawa about that time.

The specifications and forms of tender, when approved, to be printed for the convenience of those who may be tendering for the work.

I am &c.,

(Signed,) SAMUEL KEEFER,  
Deputy Commr. of Public Works.

Messrs. Stent & Laver,  
Architects &c., Ottawa.

No. 12.

OFFICE OF PUBLIC WORKS,  
Quebec, 22nd October, 1859.

### NOTICE TO CONTRACTORS.

#### *Postponement of Time.*

#### PUBLIC BUILDINGS AT OTTAWA.

In consequence of the great length of the specifications, and the impossibility of having them prepared and translated for the examination of parties wishing to tender within the time mentioned in the former advertisement, the *period for receiving Tenders at this Office is extended to Tuesday the 15th. of November next, at noon.*

JOHN ROSE,  
Commissioner of Public Works.

No. 13.

OFFICE OF THE DEPARTMENT OF PUBLIC WORKS,  
Quebec, 14th November, 1859.

### NOTICE.

#### PUBLIC BUILDINGS, OTTAWA CITY.

Tenders will be received at this Office until noon of Friday, the 30th. December next, from such competent Plumbers and Machinists as are prepared and disposed to undertake the Heating of the Parliamentary and Departmental Buildings at Ottawa.

The Tenders to state a bulk sum for which the Contractor is willing to supply all the materials, and construct, erect, and put in successful operation, all the works, machinery and appliance, connected with the entire system of Heating for each Building. He is to state upon what system his tender is based, and submit a full specification, accompanied with detailed drawings, of its application ; and to guarantee its perfect efficiency for ten years after it goes into operation.

Plans of the several Buildings may be seen on reference to this Office, or to the Architects, Messrs. Fuller and Jones, Ottawa and Toronto, or to Messrs. Stent and Laver, at Ottawa.

The Tenders are to be addressed to the « *Secretary of Public Works* », and endorsed « *Tender for Heating Public Buildings at Ottawa* », and to contain the signatures of two or more responsible persons who are willing to become security for the due performance of the contract and continued efficiency of the system, and are to be accompanied by such certificates and recommendations as the parties may have to offer with respect to its operation.

JOHN ROSE,  
Commissioner of Public Works.

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**No. 14.**

Quebec, November 19th, 1859.

**44173.**

To the Honorable Commissioner  
of Public Works.

SIR,

We have been requested by the Deputy Commissioner to address you on the subject of remuneration for our professional services in the erection of the Parliamentary and Departmental Buildings at Ottawa.

In compliance with the order in Council, we attended at Quebec to receive instructions from the Commissioner of Public Works for the preparation of specifications and working drawings, and were then informed that we should be employed upon the usual professional terms, viz : Five per cent upon the outlay.

This percentage we understand to include all charges, with the exception of travelling expenses from Ottawa to Quebec, when required to attend

upon the Commissioner, and that we shall not have any claim for charges upon any extra work that may be necessary to carry out the Buildings according to the true intent and meaning of the Plans and specifications ; these having been so well considered, we do not anticipate that any extras will arise.

Should any works in addition be ordered requiring new Plans, the same to be subject to the same rate of charge.

We would respectfully submit that the works being now let, as we think, too low, our labour and responsibility is thereby increased, and our commission upon the actual value of the work will not be equal to five per cent.

Taking into consideration the extent of the work and the great responsibility devolving upon us, we trust that you will confirm the understanding we had with the Deputy Commissioner.

We have the honor to remain,

Sir,

Your obt. servts.

(Signed,) FULLER & JONES, Architects,  
*Parliament Buildings.*

(Signed,) STENT & LAVER, Architects,  
*Departmental Buildings.*

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**No. 15.** Copy of a Report of a Committee of the Honorable the Executive Council, dated 22nd November, 1859, approved by His Excellency the Governor General in Council, on the 23rd same month.

1814.

The Committee have had under consideration a Report, dated 17th November, 1859, from the Honorable the Commissioner of Public Works, submitting Schedules of the Tenders received for the erection of the Public Buildings at Ottawa, together with the Report of the Deputy Commissioner on the Tenders so received.

The Deputy Commissioner, in his said Report, states that the seven lowest Tenders for the Parliamentary Buildings, including fire-proofing, are as follows :

1. Charles Peters, Quebec . . . . .	\$346,000
2. Thomas McGreevy, Quebec. . . . .	361,900
3. David Glass, London. . . . .	379,000
4. F. X. Berlinguet, Quebec . . . . .	399,810
5. Jones, Haycock & Co., Port Hope . . . . .	434,500
6. James Stewart & Co., Kingston . . . . .	450,000
7. John Gibson & Co., Toronto . . . . .	460,000
And that the Architect's Estimate is . . . . .	492,000

That the lowest Tenders for the Departmental Buildings, fire-proofing not being specified, are as follows :

1. Charles Peters, Quebec . . . . .	\$233,000
2. Brown & Watson, Montreal . . . . .	238,400
3. John Gibson & Co., Toronto . . . . .	249,000
4. Jones, Haycock & Co., Port Hope . . . . .	251,000
5. F. X. Berlinguet, Quebec . . . . .	273,900
6. Thomas McGreevy, do . . . . .	279,000
7. Alexander Manning & Co., Toronto . . . . .	290,000
The Architect's Estimate being . . . . .	288,000

The Commissioner states that a Tender was also received from Thomas McGreevy for the *whole* work ; but being ambiguous, he directed enquiry to be made whether it included the fire-proofing, to which an affirmative reply has been received, but that it is not accompanied by a Schedule of Prices.

That if McGreevy's last mentioned offer (N<sup>o</sup>. 47, in the Schedule) be received as a Tender for the erection of both Parliamentary and Departmental Buildings, then his Tender and that of Peters are equal in amount for the whole work, \$579,000, a difference of \$61,900 existing between Mr. McGreevy's said proposal and the aggregate of his separate Tenders, in consideration of his obtaining the whole of the work.

The Commissioner submits that he does not feel warranted either in rejecting or entertaining the Tender N<sup>o</sup>. 47 of Mr. McGreevy's, nor of offering an opinion respecting the sufficiency of any of the sureties offered by Messrs. McGreevy and Peters.

The suggestion made in the report of the Deputy Commissioner, that the Departmental Buildings be made fire-proof, is concurred in by the Commissioner.

The Committee advise that the Tender of Mr. McGreevy be received and accepted for the whole work, but that he be called upon to submit the names of new sureties.

That Schedules of prices be prepared by Mr. McGreevy to the satisfaction of the Department of Public Works.

That the Departmental Buildings be made fire-proof, the cost to be ascertained by the Department, and accepted by the Contractor.

Certified,

(Signed,) W. H. LEE,  
C. E. C.

To the Honorable the Commissioner  
of Public Works, &c., &c., &c.

**No. 16.**

**44333.**

Quebec, November, 29th. 1859.

SIR,

In reply to your letter of the 24th instant awarding me the contract for the erection of the Parliament and Departmental Buildings at Ottawa on the three conditions mentioned in your letter.

1st.—I submit the names of Messrs. L. Stafford and John Flanagan as my securities.

2nd.—I have already submitted the schedule of Prices.

3rd.—The fire-proofing of Departmental Buildings will cost fifty thousand four hundred dollars.

I have the honor to be,

Sir,

Your most obt. servant.

(Signed,) THOS. R. MCGREEVY.

To the Honorable  
The Commissioner of Public Works.

**No. 17.**1923.

DEPARTMENT OF PUBLIC WORKS,

Quebec, 29th November, 1859.

To His Excellency the Right Honorable Sir Edmund Walker Head Baronet  
Governor General, &c., &c., &c.

The Commissioner of Public Works has the honor to submit herewith a proposal by the Architects for the Parliamentary and Departmental Buildings at Ottawa in reference to the terms on which their services are to be given. He recommends that their remuneration be five per centum on the outlay, provided that the gross amount of commission do not exceed eight thousand two hundred and fifty pounds, and that this sum be divided in proportion to the cost of the respective Buildings. That this per centage shall include all charges of every description in connection with their professional services, and that under no circumstances whatever, whether of deviation from, or addition to the Plans, or delay in the progress, shall a greater sum be claimed by them. That it shall be paid according to the progress of the work at the sole option and discretion of the Commissioner.

Respectfully submitted

(Signed,) JOHN ROSE,  
Commissioner.

**No. 18.**1925.

DEPARTMENT OF PUBLIC WORKS,

Quebec, 30th November, 1859.

To His Excellency the Right Honorable SIR EDMUND WALKER HEAD,  
Baronet, Governor General, &c., &c., &c.

The undersigned has the honor to report for the information of Your Excellency, with reference to the amount to be added to the contract for fire-proofing the Departmental Buildings at Ottawa, that the cost was estimated by the Department of Public Works at \$43,918, which the Contractor considered too low by \$6,482. That to cover the possible difference, the Deputy Commissioner and Architects consider that ten per cent may be added to their estimate, and the Contractor is willing to accept that sum, making in all \$48,310 for the fire-proofing. The undersigned concurs in the recommendation and the authority to insert the

sum of \$48,310, as the price to be allowed to the Contractor for fire-proofing the Departmental Buildings,

Respectfully submitted,

(Signed,) JOHN ROSE.

Commissioner of Public Works.

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**No. 19.**

**44235.**

Quebec, November 30th. 1859.

Sir,

With reference to the third Clause respecting fire-proofing of the Departmental Buildings at Ottawa; in reconsidering the amount of the estimate, I would accept an addition ten per cent on the amount of the estimate of your Department.

I have the honor to be,

Sir,

Your most obt. Servt.,

(Signed,) THOS. R. MCGREEVY.

To the Honorable

The Comr. of Public Works.

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**No. 20.**

**44236.**

Quebec, December 1st. 1859.

Sir,

In order to secure the speedy erection of the Government Buildings at Ottawa; if the Government accedes, let the Departmental Buildings be given to Messrs. Jones & Co., of Upper Canada.

I have the honor to be,

Sir,

Your Most Obedient Servant,

(Signed,) THOS. R. MCGREEVY.

Honorable Commissioner of

Public Works.



**No. 21.** Copy of a Report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council on the 2nd December, 1859.  
1859.

On the Report of the Honorable the Commissioner of Public Works dated 29th November, 1859, submitting a proposal by the Architects for the Parliamentary and Departmental Buildings at Ottawa in reference to the terms on which their services are to be given, and recommending that their remuneration be five per centum on the outlay, provided that the gross amount of commission do not exceed eight thousand two hundred and fifty pounds, and that this sum be divided in proportion to the cost of the respective Buildings.

That this percentage shall include all charges of every description in connection with their professional services, and that under no circumstances whatever, whether of deviation from, or addition to the plans, or delay in their progress, shall a greater sum be claimed by them, and that it shall be paid according to the progress of the work at the sole option and discretion of the Commissioner.

The Committee concur in the Report of the Honorable the Commissioner, and submit the same for Your Excellency's approval.

Certified,

(Signed,) WM. H. LEE,  
 C. E. C.

**No. 22.** Copy of a Report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council, on the 2nd December, 1859.  
1859.

On the Report of the Honorable the Commissioner of Public Works, dated 30th November, 1859, stating that with reference to the amount to be added to the contract for fire-proofing the Departmental Buildings at Ottawa, the cost was estimated by the Department of Public Works at \$43,918, which the Contractor considered too low by \$6,482; that to cover the possible difference, the Deputy Commissioner and the Architects consider that ten per cent may be added to their estimate, and

the Contractor is willing to accept that sum, making in all \$48,310 for the fire-proofing.

The Commissioner concurs in the recommendation, and requests authority to insert the sum of \$48,310, as the price to be allowed the Contractor for fire-proofing the Departmental Buildings.

The Committee advise that the authority requested be granted.

Certified,

(Signed,) WM. H. LEE,  
C. E. C.

**No. 23.**

**1978.**

DEPARTMENT OF PUBLIC WORKS,  
Quebec, 2nd December, 1859.

To His Excellency the Right Honorable SIR EDMUND WALKER HEAD,  
Baronet, Governor General, &c., &c., &c.

The undersigned has the honor to submit for the approval of Your Excellency, a draft of the contract proposed to be entered into with Mr. Thomas McGreevy, Master Builder, of Quebec, for the erection of the Parliamentary and Departmental Buildings at Ottawa, in accordance with the order in Council of the 23rd of last month.

In connection with this contract, the undersigned begs to add that he received a communication from Mr. McGreevy yesterday, which is herewith transmitted, in which he proposes to relinquish the Departmental Buildings to Messrs. Jones, Haycock & Co., Contractors, of Port Hope.

The undersigned sees no objection to this proposed division of the work, provided the aggregate of the two contracts so divided does not exceed the gross amount of Mr. McGreevy's tender, with the estimate for fire-proofing added; that is to say, the sum of six hundred and twenty seven thousand three hundred and ten dollars for the whole of the work.

Your Excellency's decision on the above proposal, with the provisos named, is respectfully solicited.

All of which is respectfully submitted,

(Signed,) JOHN ROSE,  
Commissioner of Public Works.

**No. 24.** Copy of a Report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council on the 5th December, 1859.

**1859.**

The Committee have had before them a Report, dated 2nd December, 1859, from the Honorable the Commissioner of Public Works, submitting for approval a Draft of the Contract proposed to be entered into with Mr. McGreevy, for the erection of the Parliamentary and Departmental Buildings at Ottawa, in accordance with the Order in Council of 23rd November ultimo.

That in connection with this contract, he has received a letter from Mr. McGreevy, dated 1st inst., in which he proposes to-relinquish the Departmental Buildings to Messrs. Jones, Haycock & Co., Contractors of Port Hope.

That he, the Commissioner, sees no objection to this proposed division of the work, provided the aggregate of the two contracts, so divided, does not exceed the gross amount of Mr. McGreevy's tender, with the estimate of fire-proofing added, that is to say, the sum of \$627,310.

The Committee concur in the Report of the Honorable the Commissioner, and recommend the division of the contract as suggested by him.

Certified,

(Signed,) WM. H. LEE,  
C. E. C.

To the Honorable the Commissioner  
of Public Works, &c., &c., &c., &c.

# PARLIAMENT BUILDINGS,

## OTTAWA CITY, C. W.

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THIS INDENTURE, made this Seventh day of December, in the year of Our Lord one thousand eight hundred and fifty-nine, between THOMAS MCGREEVY, of the City of Quebec, in the Province of Canada, Master Builder, hereinafter throughout designated as « The Contractor, » of the first part, and HER MAJESTY QUEEN VICTORIA, represented herein by the Honorable THE COMMISSIONER OF PUBLIC WORKS, of the Province of Canada, hereinafter throughout designated as « The Commissioner, » of the second part.

**W**HEREAS the Government of the Province of Canada have, in pursuance of an Act of Parliament of the said Province, and of certain Resolutions to that effect of the Legislature of the said Province, determined to erect buildings at the City of Ottawa, hereinafter mentioned, for the use, occupation, and accommodation of the Legislature and of the several Public Departments of Her Majesty's Civil and Militia Service of Canada. AND WHEREAS, for the purpose of carrying the same into effect, Plans and Specifications have been prepared for Buildings for the use, occupation, and accommodation of the Legislature of Canada, and of the Officers and Servants thereof, (and which buildings are herein throughout designated as the « Parliamentary Buildings »,) by Messieurs Fuller and Jones, the Architects thereof. AND WHEREAS the Contractor hath agreed to and with Her Majesty the Queen, to erect, build, and complete the several buildings, and to supply all proper and requisite materials therefor, upon the terms, and subject to the conditions, stipulations, and agreements hereinafter contained. Now this Indenture witnesseth that in consideration of the sum of Three Hundred and

Forty-eight Thousand Five Hundred Dollars of lawful money of Canada, to be paid to the Contractor, his Executors, Administrators, and Assigns, by Her Majesty, Her Heirs or Successors, in manner hereinafter mentioned ; He, the Contractor, doth hereby for himself, his Heirs, Executors, Administrators and Assigns, covenant, promise and agree to and with Her Majesty the Queen, Her Heirs and Successors, in the manner following, that is to say :

1. He, the Contractor, shall well, truly and faithfully build, erect, construct, complete, and finish in the best and most workmanlike manner in every respect, and of the best materials of their several kinds, including the fire-proofing of the whole thereof, and to the satisfaction of the Commissioner, the Parliamentary Buildings to be built, erected, and placed in and upon such portion or portions of the land known as the Barrack Hill, in the City of Ottawa, as may be pointed out to the Contractor for that purpose, and according to the plans and specifications thereof respectively ; and which plans and specifications are signed by Messrs. Fuller and Jones, the Architects of the said Buildings, and by the Contractor ; and the plans whereof so signed are deposited of record in the Department of Public Works, and the Specifications whereof so signed are hereto annexed, marked A, and a table of questions and answers, in explanation or modification of the said specifications also signed, are hereto annexed marked B, and which said papers A and B are to be construed and read as part hereof, and as embodied in and forming part of this contract ; and further, that the Contractor in the erection, construction and completion of the said buildings respectively, and in every matter or thing connected therewith, or incident or relative thereto, shall be guided and bound by such further working detailed plans and instructions as may, from time to time, be furnished and supplied to him by the Architects in charge.

2. The Contractor shall and will, preparatory to or in course of erection of the works embraced in this contract, make and complete all necessary excavations, and shall find and supply all necessary and proper scaffolding, materials, tools, implements, and plant of whatsoever kind or description, for the erection, construction, and completion of the said works and every part thereof, and shall also find and work and temporarily place such examples of the work or moulds or patterns thereof, in experiment to test the style or effect, and from time to time, shall alter, vary, or renew the same, as the Architects in charge or the Clerk of Works may require ; and further, that all materials

of the said work shall, before being used, be inspected and approved of by the Architects in charge or by the Clerk of Works acting under their orders, and any materials disapproved of and rejected by the said Architects or the Clerk of Works as aforesaid, shall not be used in the works, and if not removed by the Contractor, when directed by the Architects or Clerk of Works aforesaid, then the same shall be removed by the Architects or Clerk of Works aforesaid, to such place as they may deem proper, at the cost, charge, and risk of the Contractor ; but, any such inspection, and any approval of materials, shall not in any wise subject or make liable Her Majesty to pay the Contractor for the said materials so approved, or any portion thereof, unless employed or used in the said works, nor prevent the rejection afterwards of any portion thereof, which may prove or turn out at any time before the final completion of this contract to be unsound or unfit or improper to be used in the works, nor shall such inspection be considered as a waiver of objection to the work or any part thereof, on the account of unsoundness or imperfection of the materials used.

3. The Contractor shall forthwith immediately commence the works embraced in this contract, and shall proceed with the same from time to time ; and the same respectively and every part and parcel thereof shall be fully, thoroughly, and entirely completed in their several particulars, and given up under final certificate and to the satisfaction in all respects of the Commissioner and of the Architects in charge thereof, on or before the first day of July, which will be in the year of Our Lord one thousand eight hundred and sixty-two, time being of the essence of the contract ; and further, that in failure of completion as aforesaid at the period hereinbefore specially limited for the completion thereof, the Contractor shall forfeit all right, claim, or demand to the sum of money or percentage hereinafter agreed to be retained by the Commissioner, and any and every part thereof, as also to any moneys whatever which may be at the time of the failure of the completion as aforesaid due or owing to the Contractor ; and that the Contractor shall also pay, or cause to be paid to Her Majesty as liquidated damages, and not by way, of fine or penalty, the sum of two hundred dollars for each and every week, and the fractional part of such sum for every part of a week for which the works within this contract or any portion thereof may remain incomplete, or for which the certificate of the Architects in charge of the completion of the said works or any part thereof may be withheld ; and the Commissioner may deduct and retain in his hands such sums as may

become due as liquidated damages, from any sum of money then due or payable, or to fall or become due or payable thereafter to the Contractor.

4. That in case of inclement weather occurring, whether during the progress of the works which in the opinion of the Commissioner or Architects in charge of the same, respectively, may be detrimental thereto, or during the period when the works may be suspended in whole or in part by the Commissioner or the Architects in charge of the said works, respectively, for the winter season or otherwise, such precautions shall be taken by the Contractor at his own outlay and cost, and without any charge or claim in respect thereof as may in that view be directed by the Commissioner or Architects in charge, and that any such direction of the Commissioner or the Architects in charge shall not be taken or held in any manner whatsoever to involve Her Majesty in any responsibility in regard to the preservation of the work; and further that if the contract fail in such precautions, the same may be adopted by the Commissioner or the Architects in charge, and the Commissioner may deduct and retain in his hands, out of the percentage hereinafter mentioned, or out of any moneys which might otherwise at any time become or fall due to the Contractor, all such sums of money, damages and expenses, as shall have been incurred, defrayed or expended in the adoption of such precaution as aforesaid.

5. The care of the works under this contract and of every part thereof, and of the materials, tools, implements and every thing belonging or appertaining thereto, shall be entirely at the charge of the Contractor, and he shall be liable for, and responsible for all loss, damage, detriment, or injury that may arise or be sustained during the progress of the works, and until the said buildings shall have been certified by the Architects in charge as complete, and have been delivered to and received by the Commissioner on the part of Her Majesty; and further that in the event of any loss, damage, detriment or injury, the property so lost, damaged, deteriorated or injured shall be replaced, reconstructed, restored, renewed or amended as the case may be, to the satisfaction of the Commissioner or of the Architects in charge; and further that if the Contractor fail in the replacing, reconstruction, restoration, renewal, or amendment of such lost, damaged, deteriorated or injured property, the same may be so replaced, reconstructed, restored, renewed, or amended by the Commissioner, and the Commissioner may deduct and retain in his hands out of the percentage hereinafter mentioned, or out of any moneys which may otherwise at any time become or fall due to the Contractor, all such

sums of money and expenses as shall have been so incurred, defrayed, or expended by the Commissioner for such purpose, or the Commissioner may recover the same from the Contractor, as in the next succeeding clause mentioned.

6. On failure of the Contractor to complete the works herein contracted for, at the period of time hereinbefore mentioned, the Contractor shall be liable for and shall pay or cause to be paid to Her Majesty all percentage, salaries, or wages which shall become due to the Architects in charge, Clerk of Works, or subordinate person or persons superintending the work on behalf of the Commissioner, from the period so hereinbefore named for completion of the works up to and until the said works shall actually be completed and received; and the Commissioner may deduct and retain in his hands out of the percentage hereinafter mentioned, or out of any moneys which may otherwise at any time become or fall due to the Contractor, all such sums of money and expenses as shall have been so incurred, defrayed or expended, by the Commissioner for such purpose, or the Commissioner may recover the same from the Contractor in an action in the name of Her Majesty, as moneys paid for and on account of the Contractor.

7. If it shall, at any time, appear to the Commissioner, that the establishment or the rate of progress at, in, and upon the said works or any of them, or of any work or matter incident to the same, or in any way connected therewith, are not satisfactory, or such as to ensure the completion of the same within the time hereinbefore mentioned, or on failure or breach by the Contractor of any matter or thing herein contained, on the part of the Contractor to be done or performed, or if the Contractor shall, at any time or times, neglect or refuse to carry on this contract or any part of it, or to supply requisite and proper scaffoldings, tools, implements or plant or materials, or is unable to carry on the same, then, and in any of such cases, the Commissioner may forthwith, after having given three days' notice to the Contractor of his intention so to do, and without any process or suit at Law or other legal proceeding of any kind whatever, or without its being necessary to place the Contractor *en demeure*, either absolutely take the works or any part thereof out of the hands of the Contractor, and relet the same without the necessity of previous advertisement, or employ additional workmen, and provide materials, tools, implements and all other things requisite for the completion and performance of the contract, at the expense of the Contractor; and the Contractor shall, in either case, be liable for all



damages and extra costs and expenditure which may be incurred by reason thereof; and if such damages, extra costs, and expenditure exceed in the whole the said sum of three hundred and forty-eight thousand five hundred dollars, then Her Majesty may recover of and from the Contractor the balance or excess over and beyond the said sum of three hundred and forty-eight thousand five hundred dollars.

8. If any overseer, mechanic, or workman employed on or about the works or any portion, be incompetent to perform the work or duties required of him, or give just cause of complaint, the Contractor shall immediately, upon the application of the Architects or Clerk of Works, dismiss such person or persons forthwith from the works, and he shall not be employed again thereon without the written consent of the Architects or Clerk of Works; and should the Contractor continue to employ such overseer, mechanic or workman, the Contractor shall pay to Her Majesty, Her Heirs and Successors, the sum of Twenty Dollars, as liquidated damages and not of fine or penalty, for each and every day during which such overseer, mechanic or workman shall be employed on the works, after such application for his dismissal as aforesaid; and the Commissioner shall have the same power of retaining such sums as may become due to Her Majesty under this clause, or of enforcing payment thereof, as are given and expressed in the sixth clause of this contract.

9. That whenever or so often as it may be necessary for the Contractor to co-operate with any person contracting for supplying or placing the apparatus for heating the buildings, the Contractor shall diligently, and under the directions of the Architects in charge or the Clerk of Works, perform all such works as shall be requisite or proper on the part of the Contractor for building in, securing, and placing in proper position the flues or other apparatus required for heating, in a proper and secure mode, and to prevent the possibility of accident by fire therefrom, without any extra charge therefor, and shall be bound in all things to conform to the direction of the Commissioner touching such work.

10. That when any discrepancy exists between the dimensions as indicated by the scale of any drawing, and the dimensions marked in figures on the plans or on any drawings which may be from time to time supplied by the Architects to the Contractor for the purpose of working therefrom, the figures are in all cases to be considered correct; and if there should be any discrepancy between the figures or dimensions or the forms of the construction or the material as indicated by the plans or drawings, and the dimensions and description given in the specifica-

tions, the directions of the Commissioner or the Architect in charge shall be adopted in reference to such discrepancy and shall be binding and conclusive on the Contractor.

11. Whenever neither the plans, drawings or the specifications contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and minor and detailed parts are common usual and proper in workmanship of the same or a similar character, and which are obviously necessary to the due completion or stability of the work, all such parts and the necessary materials therefor or the necessary tools and implements for working up the same are to be found, completed, provided and fixed by the Contractor, and are to be considered as included in this contract and not as extra work, it being the intention of this covenant that all such work of every kind as may be necessary for completely finishing the works proposed in the best and most workmanlike manner and for the rectification of any failure from whatever cause arising, and the well maintaining, sustaining and supporting the whole of the works as well as any and whatever change, alteration and addition that may be made thereon so that the whole may remain sound and firm, are implied in the plans, specifications and drawings heretofore mentioned, although the same are not therein specifically expressed.

12. That the Contractor shall not in any way, directly or indirectly sell, dispose of, or relet, assign, transfer, or sublet to any person or persons whomsoever, either entirely or partially, and jointly with himself, or in any other manner or way howsoever, this contract or any part thereof, or any portion of the work embraced herein or to be performed hereunder or which without being distinctly and specially mentioned herein, may yet be rendered necessary for the full and proper completion of the contract.

13. That any notice or other paper connected with this contract which may be required or desirable on the part of Her Majesty may be served on the Contractor either at his or their usual domicile, or at his or their usual place of business at the City of Ottawa, by being left at the Post Office, and any notice or other paper so addressed and left at the Post Office shall to all intents and purposes be considered legally served. And the Contractor and Her Majesty the Queen do, and each of them doth, hereby further, mutually covenant, promise and agree the one with the other of them, the Contractor, for himself, his heirs, executors, administrators and assigns, and Her Majesty, for Herself, Her Heirs and Successors, in manner following, that is to say :

1. That payment of any sums of money which may be made to the Contractor by Her Majesty under this contract will be so made according to the provisions of the Act of Parliament of this Province, passed in the 2nd Session of the 22nd Vict., chap. 3, sec. 18; and within ten days after an estimate of the Architects in charge shall have been received by the Commissioner, specifying the amount of work done according to the terms and conditions of this contract during the month then ending; but nevertheless the Commissioner on behalf of Her Majesty, shall withhold from the Contractor and retain ten per cent, out of the amount of the estimates until the perfect completion and acceptance by the Commissioner of the work, which ten per cent so withheld and retained shall be paid with the last instalment unless retained by the Commissioner as hereinbefore mentioned within ten days after the Architect in charge shall have delivered to the Commissioner his final estimate of the work performed and the materials furnished, in virtue of this contract, with detailed measurements, weights and other quantities and his or their certificate of the work having been fully completed and finished if the Commissioner shall so soon have accepted and approved of the work; and that in forming their final estimate the Architects in charge shall not be bound or governed by the preceding monthly estimates, which shall be considered and taken as merely approximate. And it is expressly declared that the monthly payments to be made to the Contractor as hereinbefore mentioned shall be made upon the basis of the *schedule of prices* hereunto annexed marked C, to be nevertheless regulated, determined and applied in all cases whatever by the Commissioner or the Architects in charge, and upon none other basis or scale, and further that the presentation of the monthly estimate of the Architects in charge shall not of itself entitle the Contractor to demand payment of the amount to be paid hereinbefore mentioned.

2. That it shall be in the power of the Commissioner on behalf of Her Majesty, to make payments or advances on materials, implements, vessels, or tools of any description procured for the works, or used or intended to be used about the same, in such cases and upon such terms and conditions as to the said Commissioner may seem proper, and that whenever any advance or payment shall be made to the Contractor upon any tools, implements or materials of any description, the tools, implements or materials, upon which such advance or payment shall be made, shall thenceforward be vested in and held as collateral security by Her Majesty, Her Heirs and Successors, for the due fulfilment by the Con-

tractor of the present contract, it being however well understood that all such tools, implements or materials of any kind are to remain at the risk of the Contractor who shall be responsible for the same until finally used and accepted as part of the work by the Commissioner; but the Contractor shall not exercise any act of ownership or control whatever over any tools, implements or materials upon which any advance or payment has been so made, without the permission in writing of the Commissioner.

3. In this contract the words « Her Majesty » or « Her Majesty the Queen, » shall mean Her Majesty, Her Heirs and Successors.

The words « The Commissioner » shall mean The Commissioner of Public Works of the Province of Canada for the time being.

The words « The Contractor » shall mean Thomas McGreevy, his heirs, executors, administrators and assigns.

The words « The Parliamentary Buildings » shall mean the buildings and erections as designed by the Architects thereof, according to the plans thereof hereinbefore mentioned and the specifications thereof hereunto annexed marked « A. » and the table of questions and answers in explanation thereof marked B.

The words « Architects » or « Architects in charge » shall mean Messrs. Fuller and Jones, Architects, of the City of Ottawa, or such other person or persons as may be appointed by the Commissioner to act as Architects in the room and stead of the said Messrs. Fuller and Jones.

The construction of the words given in this clause shall not control any more extended construction which may be given to any of such words throughout this contract.

4. That if any change, alteration or addition, either in the position or details of the works embraced in this contract or in any of the materials therefor, shall be required by the Commissioner, the Contractor will make such change, alteration or addition, and if such change, alteration or addition *shall entail extra expense on the Contractor* either in labour or materials, *the same shall be allowed to the Contractor*, or should it be a saving to the Contractor in either labour or materials, the same shall be deducted from the amount of this contract; but no such change alteration or addition, whatever may be the extent or quality thereof, or at whatever time the same may be required to be made pending this contract, shall in anywise have the effect of suspending, superseding, annulling or rescinding this contract, which shall continue to subsist notwithstanding any such change, alteration or addition; and every

such change, alteration or addition shall be performed and made by the Contractor under and subject to the conditions, stipulations and covenants herein expressed, as if such change, alteration or addition had been expressed and specified in the terms of this contract ; but no change, alteration or addition as aforesaid whatever, and no extra work whatever shall be done without the written authority of the Commissioner given prior to the execution of the work, nor will any allowance or payment whatever be made for the same in case it should be done without such authority.

IN WITNESS WHEREOF the said the Contractor hath hereunto set his hand and affixed his seal, and the Honorable John Rose, Commissioner of Public Works of the Province of Canada for the time being, acting herein on behalf of Her Majesty, hath set his hand and seal the day and year first above written.

(Signed,) THOMAS McGREEVY,

(Signed,) JOHN ROSE, Commissioner.

SIGNED, SEALED AND DELIVERED, (the several interlineations, additions and erasures throughout the same, and in the Specifications Schedule A. having been made prior to execution and delivery of the Deed, and being initialed in the margin thereof by me as attesting witness.)

In the presence of

H. BERNARD, Chief Clerk,

Office of Attorney General, U. C.

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# SPECIFICATION

Of sundry Artificers' works to be performed in erecting and completing the Parliament Buildings, and all the appurtenances thereof on a plot of ground, commonly known as the Barrack Hill, and situate in the City of Ottawa, Canada West, for the Commissioners of Public Works, and under the direction and superintendence of Messrs. Fuller and Jones, the Architects appointed by the Commissioners, agreeably to the Drawings hereinunder enumerated, and to the accompanying specifications, and also to such other requisite detail or working Drawings as may be hereafter given by the Architects, and subject in all respects to the approval of the Commissioners and their Architects.

## LIST OF DRAWINGS.

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| <p>No. 1. Block Plan,<br/>         2. Basement Floor,<br/>         3. Ground Floor,<br/>         4. First Floor,<br/>         5. Roof Plan,<br/>         6. South Elevation,<br/>         7 &amp; 8. North Elevation and<br/>             Section on line A. B.,<br/>         9. East and West Elevations,<br/>         10. Section on line C. D.,<br/>         11. Section on line E. F.,<br/>         12. Details Central Tower,<br/>         13. Details of Wing,</p> | <p>No. 14. Elevation of Library,<br/>         15. Section of ditto,<br/>         16 &amp; 17. Elevations longitudinally of one compartment of House<br/>             externally and section of ditto internally,<br/>         18. Transverse section of Houses,<br/>         19. Elevation of Arches in Entrance Hall,<br/>             Ditto in Members' Lobby.</p> |
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In many of these Drawings some parts are shewn complete, and others omitted or left incomplete, and some items may be shewn upon the Drawings, and not mentioned in this Specification or *vice versa*. In all such cases they are nevertheless to be understood as if they had been distinctly and severally shewn or specified complete in all respects.

## EXCAVATOR.

To remove all old buildings or other impediments ; to excavate the ground and rock as may be found requisite for the basement story, the foundations and other walls, areas, air flues, drains, floor cellars, and all other works for which it may be necessary to dig or excavate.

To render level the bottoms for receiving the foundations and walls.

Filling in and  
levelling.

To fill in about the foundations and walls after they are built and well ram down the filling with heavy wooden rammers. To level and fill and do all such other rough ground work as may be necessary for forming the sectional ground lines shewn on the drawings or as may be found requisite, and to provide extra soil, should it be required.

Removal of  
rubbish.

To remove and carry away from the site all earth, rubbish or other matter that may not be required or that may be found superfluous after the whole of the filling in and levelling is properly completed ; and finally to leave the whole of the works and premises entirely free from all rubbish or useless materials.

Removal of wa-  
ter, &c.

To bale or pump out and remove all water, soil earth or rubbish that may be necessary for properly laying the foundations, whether arising from rain, springs, drains, cess-pools or otherwise.

To at once form drains for carrying off surface water that may accumulate in the cellars or foundations, during the progress of the works.

The care of the Clerk of the Works' Office, with its appurtenances, shall rest with the Contractor, who shall provide fuel and attendance for the same so long as the works continue in progress, and he will be required to provide such assistance by messengers, labourers or others as may be necessary to the Architects or their Clerks, in the performance of their duties.

#### MASON AND BRICKLAYER.

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[THE CONTRACTOR MAY MAKE BRICKS ON ANY OF THE CANAL LANDS OR UPON SUCH ORDNANCE LANDS AS MAY NOT BE LEASED BETWEEN OTTAWA CITY AND HOG'S BACK.]

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To be answerable for and make good at his or their own cost and expense, all damage that may occur to the works during their progress whether from frost or any other cause whatever.

To put under all the walls shown or referred to rough footing courses of large well bedded and bonded stones at least nine inches wider than the walls. The joints to be well broken, and the whole to be laid in mortar and properly grouted with hot liquid mortar as often as may be required by the Architect.

The foundations walls up to level of basement floor to be built with good sound rough stones, flat bedded, and well bonded and laid in mortar, and well grouted with hot liquid mortar as often as required.

One dwarf wall 18 inches in thickness to be built to support wood floors in basement.

The external walls and other walls, tinted blue on plans, to be built of good sound rough stone, flat bedded and bonded, and one through bonder in every superficial yard of work.

The external walls are to be built in two thicknesses, that tinted blue to be of stone, and that tinted red on the Plans to be built with 9 inches brick with a space of 3 inches between, this is to be properly bonded to the stone every fifth course in height and sixth in length, by brick and flat bedded stones, and hoop iron bond where necessary. In gables or other walling where inside face is within roof framing, or otherwise hidden internally the brick lining may be omitted, and rubble backing continued through the full thickness. The outside face of the external walls to batter, as shown or figured in the Plans, and to be in random range work with horizontal beds and vertical joints, no dressing on external face, but the stone to be broken so as not to shew the quarry face, care to be taken in the arrangement of the large stones that they shall be interspersed with the small ones, and tolerably equal in their distribution over the face of the walls; these walls are to be pointed with dark mortar at completion, the joints must not therefore be flushed up as the work proceeds.

Batter of basement walls.

All the stone work to be properly levelled to receive brick-work.

Quoins to be of the native sand stone or other approved Quoins. stone, and are to have flat beds, the faces to be bush hammered and no more dressing is required than to furnish an arise to plumb by, no tooling on any account whatever, the



quoins to rise in irregular heights with irregular break of bond on faces and random back joints, these stones to average in length 2' 0" and in return 1' 0" and to bed at least 8".

Window and  
door jambs,  
strings, &c.

The plinth, window and door jambs, strings, cornices, &c., &c., to be wrought according to the detail drawings, the face of the stone neatly bunched, no tooling or rubbing required, but care to be taken to preserve the arises true. All the dressings to be properly bonded and bedded, the joints made close, and to be cramped and joggled together as may be found requisite.

All external and internal angles in plinths, cornices, and string courses, to be worked out of solid stone, and all the stones to average not less than 20 inches in length, and to bed not less than 8 inches on walls. One bond on every 8 feet run, tailing into walls not less than 20 inches.

Kind of stone.

The window and door jambs, sills, arched heads, cornices, strings and mouldings of every description to be executed with the yellow sand stone from Perth, or the Cleveland stone, or any other stone of equal quality that may be approved. The relieving arches to be formed with stones of different colours.

Flying buttresses  
of Library.

The flying Buttresses of Library to be executed with block lime stone of approved quality, the joints most carefully wrought and made as close as possible, to have slate dowels, and set in mortar formed with the best hydraulic lime or the best Portland cement (English), the weathered copings to be of sandstone and of approved quality; to have joggled joints and to be set in cement, and to be cramped together with copper or galvanized or tinned iron cramps.

All these stones to be of as large sizes as possible, and of the soundest stones, free from all shakes, and the joints grooved and run with cement.

All stones of cornices, corbels and projecting mouldings to tail into walls at least two-thirds of their projection beyond the external face of walls.

The pinnacles are to be of solid Perth, Cleveland or selected block stone of the dimensions shewn, and to have slate dowels, the joints made as close as possible and set in cement.

Relieving arches to be turned over all openings, and where they appear in external walls, are to be formed of stones of different sizes and colour, as shewn. <sup>Relieving arches.</sup>

Copings, where shewn in the plans or where requisite, to be executed with block stone, with joggle joints, the joints made as fine as possible, set in cement, and cramped together. Where slates abut against walls, a groove is to be left for the insertion of lead, and after it is inserted to be stopped with cement, and a stone tabling projecting from the wall to be built over it. <sup>Copings.</sup>

The Central Tower is to be kept at least 20 feet higher, as the work proceeds, than the rest of the building. The roof over the entrance porch to be groined with white brick 9 inches in thickness, and to have cut and chamfered stone ribs, with carved corbels at springing and bosses at intersections as shewn, a circular hole with stone curb formed as shewn. The window of the belfry to be filled in with stone 6 inches in thickness, pierced, &c., as shewn. That portion immediately under the clock face is to be gathered over so as to form an octagon, the outside to be faced with stones in large blocks wrought and weathered, &c., as shewn (not tooled), cramped together as requisite, and supported on stone and brick groined arches. Pinnacles to be executed as described for those of Library. <sup>Main tower.</sup>

Fix in Central Tower, in situations shew on the Drawings, five tier of iron chain bond connected by vertical rods (to be provided by smith) properly lapped and hooked at the angles, and these bonds to be let into grooves formed for the purpose, and the iron made hot, and well pitched before fixing. Provide and fix large projecting corbels of stone to receive beams and girders for the support of the bells and floors wherever necessary. <sup>Iron chain bond.</sup>

The Ventilating Towers to be constructed as shewn. To be groined with brick 9 inches thick under ceiling of Houses, with marble ribs to match other arches, and to be arched in corridor as indicated. The tops to be formed of block stone wrought (not tooled), weathered and joggle jointed, as shewn, groined under with 9 inches brick. <sup>Ventilating towers.</sup>

Fix in each tower, 2 tier of iron chain bond as before described. (To be provided by smith.)

**Houses.**

The Pillars, Piers, Caps, Bases, Plinths, and Arch moulds, and those portions tinted grey in the sections, to be executed with Arnprior marble or other marble of equal and approved quality ; the pillars and piers to be of the dark colour, the caps, Bases and Strings of white marble. The Arch mouldings and circles, in spandrels also to be of white and grey marble, in about equal quantities. The Piers under bases of pillars, to be of solid block dark coloured marble. All the marble to be carefully wrought and polished.

**Pillars in public hall and Members' corridor.**

The Pillars, Bases, Arch Moulds, and the Balustrade in Public Hall and Members' Corridor, and in Saloon in Basement, to be executed in marble, as specified before.

**Dressings.**

The internal jambs and mullions of windows to be executed with light coloured sandstone of similar quality to the best bed obtained in the neighbourhood of Perth, properly dressed, bonded and bedded, all the joints made as close as possible.

**Jambs of windows towards yard.**

The jambs of windows, where facing towards yard, to be as plain as possible.

**Relieving arches.**

External relieving arches over all openings, the stones arranged in different sizes as shewn, and to be of different colours.

**Double sashes.**

All the windows to have double sashes or casements. In those windows having mullions, the internal mullions and jambs to be in stone as before specified, in others the casements to be fixed in wood jambs built into brick walls.

**Entrance steps.**

The external entrance steps, each in one length, and landing to be constructed of Ohio stone, finely bush hammered, square nosings, and supported on brick or stone arches, treads 13 inches, riser 7 inches. The balustrade to the steps to have turned balusters of marble.

**Internal steps.**

The internal steps in Public Hall where tinted blue, to be of Arnprior or other approved marble, with square nosings, the treads 13 inches, and risers 7 inches to be rubbed, landings ditto, of Arnprior marble, at least 3 inches in thickness, all to be supported on brick or stones arches, the steps to have joggle joints, &c, complete, all steps to be in one length.

**Floor of entrance Hall and Library.**

The floor of Entrance Hall, Library, and passage leading from Picture Gallery to Library, to be formed of a bed of concrete 9 inches in thickness, and upon that a layer of finer concrete  $1\frac{1}{2}$  inch thick, formed of gravel about the size of a

pea, and clean sharp sand, and hydraulic lime, and on this a layer of Portland cement  $1\frac{1}{2}$  inch thick, mixed with a proper proportion of fine sand, this finishing coat to be laid by a Plasterer. This cement is to be laid in the best and most workmanlike manner, and so floated, that no joint or unevenness may be seen after completion.

All other floors and yards tinted blue on basement floor Other floors.  
Plan, to be laid with concrete 9 inches thick, and finished with Portland cement  $1\frac{1}{2}$  inch thick, finishing coat laid by Plasterer.

The concrete to be formed of the best well burnt hydraulic Concrete.  
lime (fresh burnt) mixed in the proportion of one of lime to seven measures of gravel, sand and broken stones. The lime is to be ground under the edge runners, and kept dry under cover in bags till used.

Provide and fix to all fire places throughout the building, Hearths.  
hearths of marble  $2\frac{1}{2}$  inches in thickness, (rubbed) projecting 1 foot 8 inches before the face of walls or chimney breasts, and extending the whole length before the jambs of chimney pieces, also back hearths of fire bricks, or stone that will stand fire.

To set all fire grates throughout the building. Relieving  
arches to be turned over all openings in stone or brick walls, Setting grates.  
and inverted arches when required.

The Library to be groined with wrought and chamfered 7.  
stone intersecting ribs, and the spaces between filled in with hollow bricks as shewn on detail Plans, great care to be taken in accurately cutting all the stones, and bonding and cramping.

Fix two tiers of iron chain bond in situations shown in large dome, and one tier in upper dome above window groin, (to be provided by the smith.) To build into the walls at entrance from corridor and from Library into staircase the iron jambs for wrought iron fire proof door, and to build the jambs for iron doors to all vaults.

One staircase to be carried up for access to gallery round Staircase.  
lantern, the part above roof of rooms adjoining to be circular as shewn, the top to be covered with slate. The staircase from ground floor to landing leading to roof of this one stair-

case, to be of Ohio stone, risers 7 inches, steps to tail into walls at least 6 inches, and to have stone newel in circular part.

To arch and corbel over for the circular part when it rises out of roof, (in the other spaces for staircases), the roof to finish with a gable, the steps in roof leading to flat to be three feet in width of native stone, rising 8 inches and tread 10 inches, to be built on rough masonry resting on groined arch. Provide and fix staircases of native stone leading from ground floor to basement for use of Clerks to their vaults and to Messenger's apartments, two flights to each wing of the building and one in Library.

Provide and fix all requisite corbels for support of iron work, and fill in upon haunches of all arches with concrete, formed to section as shewn.

Ventilating  
towers.

The ventilating towers where they pass through the roof of houses, to be groined with guaged brick 9 inches thick, with ribs at angles of marble, wrought to match with other arches, and to fill in on the backs of these arches with concrete or rubble masonry so as to form level floor above, and the floor to be laid with Portland cement  $1\frac{1}{2}$  inch in thickness, to be laid by Plasterer.

Inside louvres to be of 1 inch slate, 18 inches wide, and in all to rise 12 feet.

Mortar for rubble  
masonry.

All the mortar for rubble masonry to be composed of two measures fresh well burnt lime, to five measures of sand.

Mortar.

All the mortar used in the brickwork to be of the best fresh burnt brown lime, composed of one part lime, and three of clean sharp pit sand, and the whole to be properly mixed together dry, and a sufficient quantity of water being added, the whole to be ground under edge runners, or in pug mills.

The mortar to be used as hot as possible, and no more mortar to be mixed in one day than can be used in the same, and no stones or mills shall be allowed to be served except by regular measure of the components.

Notwithstanding the above directions, the Architects shall be at liberty to change the proportions of the above materials at their discretion.

Pointing.

The pointing mortar to be composed of one part best brown lime, one part sharp forge ashes, and one part iron scales,

mixed and ground under the edge runner to a fine paste, as required for immediate use.

To thoroughly fill in with this mortar all the joints of the external stone work and any cracks that may appear in the stones set in the walls, and then point the whole of the same with a neat and slightly raised joint, not cut, but smoothed on the face, and along the top and bottom, square with beds and joints of the stones. The whole of this pointing is to be executed with the greatest possible care, and so as to prevent the possibility of the external wall work being liable to leakage in the most severe weather. No part of this pointing is to be left until seen and approved of by the Architects, or the Clerk of the Works in their absence.

The joints of the whole of the interior walls, arches, &c., *Flush up* where plaster is not to be used, are to be made as close as possible and filled in with fine mortar made with lime and sand formed of the stone or marble used. The external brickwork to be neatly tuckpointed with dark mortar. When any is being done in dry weather, the joints are all to be first well wetted.

To execute the drainage as indicated by the Plans, with *Drainage* glazed stone ware pipe of a make and quality to be approved of by the Commissioners, or their Architects.

All the pipes to be in 2 feet lengths, with proper collars to make the joints and to be of the dimensions figured on the drawings.

All surface water drains are to have gulley syphons under the kerbs for the gratings. The foot of every soil pipe is to be connected with the socket of a syphon trap.

All drains to have proper quadrantal or segmental bends and single, double, and other junctions, as indicated by the Plans, or as may be found necessary. All the junctions are to be oblique, and no rectangular junctions are to be used. When small drains run into larger ones, the junctions are to be made with sockets of a proper size to receive the various pipes, whatever their diameters may be, as putting a 4 inches pipe into a 6 inches socket, and stopping the joint with cement will not be allowed. The whole of the drains to be laid with a fall of at least 3 inches in every 10 feet. The joints are to be made with the best Portland cement and are to be most care-

fully stopped. All the pipes are to be laid and bedded in well pugged clay. No pipe to be in any case less than 5 feet below the level of surface of ground. No drain to be taken through masonry of any pier of main walls. Apertures are to be left in the walls through which drains pass when the same are being built, and these are to be solidly filled in when the pipes are put through.

The greatest possible care is to be taken that the fall given to the drain pipes is uniformly the same. Extra syphon traps are to be put in such parts of the drainage as are marked on Plans. Include in estimate the following quantities :

12 inches diameter . . .	one hundred yards,
9 do do . . .	two hundred yards,
6 do do . . .	three hundred yards,
4 do do . . .	three hundred yards,
Junctions, &c.	

The whole of the drainage is to be executed in the most complete and efficient manner, and none of the pipes, traps, bends, &c., are to be covered over until inspected and approved by the Architects.

All the pipes are to be thoroughly perfect, and are to be submitted to the Clerk of the Works, previous to laying, as no flaw of any kind will be allowed. All descending pipes, and pipes from sinks, &c., are to have syphon traps.

**Sinks.**

Provide and fix in cooking kitchens under smoking rooms and sculleries of residences, cast iron sinks 2 feet 11 inches x 1 foot 5½ inches and 5½ inches deep, with bell traps, &c., complete. Each is to be carried on proper brick work, resting on masonry, and to have pipe leading into drain.

**Brickwork.**

To execute all the walls and partitions, tinted red on the Plans, with good, sound, hard, well burnt bricks. The brick lining to stone walls to be properly bonded to the stone work with flat stones, bricks, and hoop iron. A groove 3 inches in width to be left in the space between the window sashes, to allow the venetian shutters to slide into the walls, this groove to be only as high as the springing of arches of windows, and the outside sash to be hung so as to run up into the head; proper spaces must, therefore, be left in the arches for that purpose.

All the brick work to be executed in English bond of alternate courses of headers and stretchers, every header to be a whole brick, with close joints, well bedded and flushed up with mortar. No soft or unsound bricks are to be used in the work, and no bats to be used, except for closures. No four courses to rise more than  $11\frac{1}{2}$  inches.

The walls to be well flushed every course and well grouted with hot liquid mortar every four courses in height. All bricks to be well soaked previous to use.

The brickwork is to be executed in the best and most workmanlike manner, and when abutting or going into stone work to be thoroughly bonded thereto.

Provide 30 cwts. of hoop iron bond to be inserted in all Bond brick walls and partitions as may be directed; the bond running through all openings to be cut off at completion, and turned down into the courses below. The brick walls and partitions are to be carried up regularly together, having no part thereof at any time 5 feet lower than the rest. Chases to be left for all soil or other pipes, and the tin pipes for hot air to be built into walls as the work proceeds.

Cut splays, chamfers, &c., for internal doors and windows Cutting. as may be requisite or as may be ordered. All the doors (except otherwise shewn) to have pointed arches of brick, edges chamfered. The outside sashes are to slide up into the walls, spaces must therefore be left.

To form proper fire places wherever indicated on the draw-Fire places. ings, with proper smoke flues therefrom not less than 9 inches square, except those from kitchen which are to be 14 inches square, carefully turned when curves occur, and pargetted with cow dung, mortar, &c.

Two flues 18 inches diameter each to be carried up from Engine house and to be taken up in two chimney shafts, one on each side of the central court.

Turn two half brick rims over all fire places and half brick Trimmers. trimmers before all fire places 2 feet longer than the openings and one foot nine inches projecting. Turn proper and sufficient arches to receive stone steps to external entrances. Turn full and sufficient brick arches over vaults, and also over foundation walls of Library, and fill in upon the haunches with concrete, holding 18 inches above the crown of arches.



Turn brick arches with chamfered edges to all doorways in corridors, and wherever indicated on the plans, and relieving arches over all openings, and inverted arches when necessary.

A flue  $4\frac{1}{2}$  inches x 9 inches for the vitiated air to be carried up in the walls from all rooms, lobbies, &c., and staircases, and one for every twenty feet in length of corridors; these flues to open in the ventilating chambers in roof.

**Pugging mortar.** To lay upon strips between joists, in basement, proper pugging mortar, 3 inches thick, and raised to 4 inches at sides of joists, composed of one measure of lime to five of coarse sand.

**Urinals.** To construct Urinals where shewn on plans, with back and two end pieces of  $\frac{3}{4}$  inch slate 3 feet 3 inches high, with divisions of 1 inch slate 4 feet 6 inches high, and projecting one foot 9 inches from the wall, and let 1 inch into a chase in the wall; the upper and outer angles to be rounded off. Put between each of the apertures a piece of 1 inch sawn and rubbed slate 12 inches wide, set bevelled to form a trough as far as three feet from the wall in one or two pieces set in cement, with a fall towards drain. Form drain along the back, wrought half round out of solid slate, and with a good fall towards down pipe. All the slate work is to be sawn and rubbed, and made hot, and thoroughly saturated with pure oil, and the whole is to be grooved, cramped and fixed in the most secure manner, and all the joints made in red and white lead.

**Mortar under slating.** To provide and lay proper mortar under the slates of all roofs of which the underside of rafters is not plastered.

**Chimney pieces.** To provide and fix to all fire places chimney pieces of the value of \$25 each, including fixing complete, except messenger's rooms and basement rooms in dwelling houses which are to be \$12 each, including fixing complete.

**Scaffol.** To provide, erect, and maintain sufficient, secure and brickwork, which scaffolding is to remain for the use of all the other artificers so requiring it, and not to be taken down until directed by the Architects. All walls whether of masonry or brickwork, are to be built from scaffolding on both sides, and no overhand work will be allowed.

The contractor is referred to the enlarged details of various Details. parts of the buildings for the correct dimensions. Full sized drawings of all the details will be furnished to the Contractor as the work proceeds.

To provide all labor, material, and appliances necessary Setting out. for the setting out of the works, under the direction of the Architects or their assistants.

To cut all necessary holes and grooves in all stone and Sundries. brickwork where required for inserting any iron, wood, lead or other work whatsoever.

To provide and fix all requisite bond stones, slate dowels, iron or copper cramps, and running with lead, that may appertain to mason's or bricklayer's work. Properly bed all bond timbers, plates, lintels and all wood or stone work so requiring. To bed in and point round with lime and hair mortar, all door or window frames. Execute all requisite beam filling.

To perform all requisite jobbing work in attending other artificers, and provide all materials and labour usual for, or connected with the mason's or bricklayer's works, or necessary in order to complete the whole of the works to the satisfaction of the Commissioners or their Architects.

All stone cutter's and carver's works must be executed at the works, unless by special permission to the contrary, which the Architects will only grant in very exceptional or urgent cases, and certainly not at all in relation to carving.

Cramps and dowels are to be used wherever necessary or Cramps. wherever the Architects or their assistants may direct, such cramps and dowels are to be iron, boiled in oil and red lead and where necessary are to be run with lead.

The centres for turning the arches and groins over the li-Centres. brary and other arches and groins are to be constructed in the most workmanlike and substantial manner, and these, together with any other centres, are not to be struck, until so directed by the Architects, and in all cases to be constructed as shall be hereafter directed by the Architects, or the Clerk of the Works in their absence.

Provide all requisite centres, moulds, templates, tools, edge runners for grinding mortar, cement, &c,

All mouldings to be worked from metal moulds only, and all moulds to be submitted for approval. Specimens of mouldings, carvings, &c., to be wrought for approval of Architects, when so required.

**Carving.**

The carving to be executed in artistic style, and subject in all respects to the direction and approval of the Architects. Such carving is to be executed on blocks or faces built into the walls as the Architects may desire. The carving in the panels in north gables of houses, not to be included in this contract.

No carver shall be allowed to work except under the sanction of the Architects.

All projecting mouldings, carvings, &c., are to be cased and protected from injury as the work proceeds. All inside and outside steps to be covered and protected immediately they are set.

**Concrete for  
fire-proof  
floors.**

To provide sufficient concrete to cover the strips that rest on the bottom flanges of the iron joists. The filling in over the arches and all other parts, where the floors are to be finished with cement, or where the floors are to be made Fire Proof. Such concrete to be made of the best fresh burnt brown lime, mixed in the proportion of one measure of lime, to six measures of the following ingredients, viz: Broken brick or hard burnt clay rubble one measure, Smiths' Ashes, one measure, Course Engine Ashes one measure, and broken Clinkers two measures; should these materials not be readily obtainable, others of similar character may be substituted, if satisfactory to the Commissioners or their Architect.

The proportions are to be correctly ascertained, and the lime is to be brought fresh from the Kiln as required, and ground under Edge Runners, and kept dry in bags, under cover, till used.

The concrete is to be laid on the strips in two equal thicknesses, and well trodden down, the first thickness being allowed to become tolerably dry before the other is put on, and being well wetted on its surface when the second is applied.

Where there are to be boarded surfaces put over the concrete, bevelled wood fillets, as shewn on the details, to be provided by the Carpenter, are to be carefully bedded by the

Mason with the assistance of the Carpenter. To fix the iron joists and girders on proper stone bearers.

The Contractor to place on the site 300,000 bricks within one month from the date of the signing of the Contract.

The whole of the walls to be brought to a level just under the basement floor line with flat bedded stones properly jointed—ridges of mortar to be laid along outside and inside—and melted pitch mixed into a proper proportion of tar to prevent cracking, and to be poured into the trench about 1 inch thickness and as it is cooling sifted ashes to be thrown over its surface.

The outside brick facing to walls in Courts wherever such occurs is to be done with the best picked bricks.

The hearths may be of Ohio stone 3 inches thick rubbed on surface instead of marble before specified.

The corners in the houses opposite the Ventilating Towers are to be arched and groined as shewn and specified for the Towers.

Arches to be turned in walls over corridors to admit light from skylights, to be in three brick rims and stepped. Arches in corridors for light.

The stairs from turret to flat round lantern of library to be enclosed with 9 inches brick walls resting on to. Stairs over Library.

Each staircase to be constructed with solid spandrel steps of the sizes shewn. They are to be built into the walls one foot at the ends, and each step joggle jointed, landings in every case 6 inches thick in one stone. The whole to be carefully cleaned off to an even surface on the underside, having raking soffit, and left complete in every respect. The public staircase to be continued to give access to ventilating roofs, only not to exceed 3 feet wide. Stone staircases.

### CARPENTER AND JOINER.

The whole of the timber and lumber to be of the best description of the various kinds specified free from sap, large loose and dead knots thoroughly seasoned and sawn die square. Lumber.

No joists, rafters, or other similar scantling to be more than sixteen (16 inches) apart from centre to centre unless otherwise directed. The work to be executed in the best and Workmanship.

most workmanlike manner and subject at all times to the direction of the Architects.

**Workshops.**

The carpenter's and joiner's works must be prepared and executed on the works, for which purpose the contractor will be required to make proper provision, every facility possible will be afforded him by allowing the use of either of the

**Damage by fire**

houses for a shop as soon as they may be covered in. The contractor making all temporary arrangements requisite, at the same time the contractor is to distinctly understand that every precaution must be taken to prevent the chance of fire or other damage, and in the case of such occurring the whole

**Lumber to be delivered on site immediately.**

of the work is to be made good at his cost and expense. The contractor will be required to deliver upon the site within one month from the date of signing the contract, 300,000 feet of seasoned clear lumber, and the whole of the rest of the lumber necessary for the joiner's work, including the flooring on the ground, before the first day of February, 1860, and to stack up the same for further seasoning.

**Date before 1st February, 1860.**

Provide and fix and maintain all necessary timbers for, stays, scaffolding, shores, or planks for any other purposes required for the due, safe and skilful performance and preservation of the carpenter's and joiner's work.

Provide and fix all necessary turning pieces, tools, templets, needles, moulds, rods, levels, and other things requisite to the setting out, construction and completion of the several works, and it will be strictly required that the framing of roofs, joisting, partitions, beams, &c., as well as of all joiner's work be accurately set out on boards to a large scale for the information and guidance of the mechanics before commencing the respective works, with all joint iron work and other parts connected therewith, fully delineated, which said setting out will be strictly required to be submitted to the Architects, for approval before such respective parts are commenced.

**Setting out.**

**Lintels.**

Provide and fix all necessary and proper lintels having a depth of at least 2 inches for every four feet clear of bearing and with a bearing in the walls at each end of not less than 6 inches, to have 2 inches additional bearing at each end for every foot clear of bearing beyond four feet. The lintels to

be whole thickness of walls. In wide walls the lintels to be in two pieces in width over all doors, windows, and other openings so requiring.

Provide and fix all wood bricks which may be directed or <sup>Wood bricks.</sup> necessary for the fastening of the finishings.

Cut out for, provide and fix all cast or wrought iron work to <sup>Fixing wrought iron work.</sup> the roof floors, partitions or elsewhere connected with the framing.

Provide and fix independent of wall plates for floors and roofs the following tiers of bond timber.

Ground floor.—One tier wood at springing of windows 9 in- <sup>Bond timber.</sup>ches by 3 inches.

First floor.—One tier wood at springing of windows 9 inches by 3 inches. All the bond timber laid as near centre of wall as possible and returned through all main cross walls, all joists and returns dovetailed and spiked. No bond timber to be cut out until directed. No bond timber or other scantling to be placed within 9 inches of any flue, and should any bond timber be omitted from its proper place, the Contractor will be charged the cost of taking down and rebuilding such part of the work as must necessarily be disturbed for its insertion.

All the wall plates to be dovetailed, halved, and spiked at <sup>Wall plates.</sup> the angles and other intersections, and short return pieces at least two feet long, to all walls at right angles.

All raking joists properly notched bird's mouthed and <sup>Joists.</sup> caulked down or tenoned as the case may require. All upper stages or stepped floors to have joists and studs halved and tenoned. All firrings and brackettings to the stepping floors to be not less than 2 inches thick, and of full height to receive the floor boards.

All floors in the basement to be filleted and sound boarded <sup>Sound board-</sup> and prepared for pugging (which pugging is to be formed and <sup>ing.</sup> laid by the bricklayer) the fillets to be  $1\frac{1}{2}$  inch by 1 inch, and boarding to be 1 inch stuff chopped and in narrow widths.

All horizontal floors to be cross strutted with 3 inches by  $1\frac{1}{2}$  <sup>Strutting.</sup> inch, stuff well nailed, one tier for every ten feet bearing. All joists to be well spiked as soon as laid. Joists in every case to be accurately scribed down to the level, no chips or wedges

**Trimming joists and trimmers.** will be allowed. Joist to be laid perfectly out of winding. All trimming joists and trimmers to be at least two inches thicker than the common joists, double tusk tenons and boxing to all trimmings.

The architects reserve to themselves the right of directing that the joists be laid accross in a different manner to that shewn on the drawings, provided that by so doing, no additional beam or girder be required.

**Laying of floors.** All floors to be laid at the time required and directed by the Architects, and to be well side nailed ; boards with broken tongues will be rejected. Returned and mitred and glued boards to all hearths or other openings 3 inches wide. All floors to be cleaned off in the best manner with a smoothing plane, and thoroughly protected from wet mortar, plaster, paint, or any other dirt or stain at rendering up of the buildings.

All the oak wood floors of corridors and staircases are to be cleaned off and prepared for oiling.

**Strength of joists.** All the joists to have a sectional strength of 3 x 4 inch in depth to every lineal foot of bearing, whether the same may be upon walls, girders, or beams.

**Bearing beams.** All floors where the bearing walls exceed fourteen feet apart, to have a strong beam of not less than 12 inches in thickness, by 4 inch in depth for every lineal foot of clear bearing up to eighteen feet, and beyond that length, every floor to have additional beams, one for every eight feet of the length of the joists.

The size of the scantling to be according to the foregoing rule. Every beam to have a bearing at each end of not less than 1½ inch for every foot in length, and no joists to have a bearing of less than 6 inches. In every case where the ceiling is shewn or intended to be flat, the joists are to be framed in with alternate dovetail top boxings and double tusk tenons, and bottom boxings.

**Templets.** All beams to lie on 9 x 4 inch templets or plates of the whole length of the pier or wall on which they may rest.

All floors (unless supported from below) having a greater width than 30 feet to have trussed girders, the beams having an extra six inches in width, and being sawn down twice—to

have  $\frac{1}{2}$  of an inch wrought iron rolled plate flitches, breaking joint with each other not less than five feet, and bolted every 30 inches apart, with  $\frac{1}{2}$  of an inch bolts with nuts complete. Wrought iron plates and bolts.

Wherever ceiling beams are deeper than the joists of their floors, they must be cased with  $1\frac{1}{2}$  inch wrought casings with rolls and stop chamfered edges, &c. Ceiling beams to be cased.

The ceilings of entrance hall, wardrobes, corridors and passages, and other rooms so shewn, to be framed in panels moulded, as shewn, and to be boarded with  $\frac{1}{2}$  of an inch wrought, matched, chamfered and tongued boarding, in boards not more than 6 inches wide. Some of the panels in ceiling of corridor to be glazed (by Glazier). Ceilings of corridors and passages. Glazing the panels to ditto.

The raised floors of both houses and the galleries of the same to have rounded nosings and  $1\frac{1}{2}$  inch x 1 inch mouldings underneath,  $1\frac{1}{2}$  clear pine treads and 1 inch risers secured to 2 inch blockings at least two to each step, to be returned with proper nosings to match floors; close strings of  $2\frac{1}{2}$  inches stuff double chamfered on the top, and housed for steps and risers where there are more than two risers. The whole to be made perfectly complete. These steps occur in both houses on ground floor and in galleries. Raised floors to houses and passages to ditto.

All floors, where not otherwise specified, to be laid into the best  $1\frac{1}{2}$  clean wrought grooved and tongued red pine in boards, not exceeding 6 inches in width edge nailed. Floors.

The floors of saloons on basement to be laid with the best  $1\frac{1}{2}$  inch clean wrought, grooved and tongued white oak in boards, not exceeding 6 inches in width. Oak floors.

Provide and fix to all entrance doors, having wood floors, and doors where steps are shewn leading from marble or cement floors, solid wrought oak steps with moulded nosings.

The whole of the timber, in roofs, unless otherwise described, to be of the best sound white pine. The roofs where the timber are not exposed internally to have wall plates generally 9 x 3, pole plates 6 x 4, ridges 12 x 2, hips and valleys 14 x 3, rafters and collars on rafters 6 x 3, ceiling joists 5 x 3, purlins 6 inches thick and to have a depth of 1 inch for every clear foot of bearing, to be in as long lengths, and scarfed where necessary only on a wall or trussed principal. All wall and pole plates to be dovetailed, halved and well spiked at the joinings. All ridges to be scarfed and hips, birds- Roofs.



Framed principals.

mouthed at top and tenoned at bottom to 9 x 4 dragon pieces, which must be coggled down to angle ties same size as plates and dovetailed thereto. Wherever bearing for ridges, purlins, &c., exceeds 19 feet, there must be framed principals at distances, not exceeding 10 feet, unless otherwise shewn or directed.

Chamfered and moulded work.

The gauge of such framed principals, where the length of the tie beams does not exceed 30 feet, to be  $\frac{5}{8}$  inch for every foot of distance between them or between them and the walls, when there is to be only one, and one inch, extra thickness for every five feet additional length of tie beam. The average size of timbers being for tie beams twenty-five feet long and not exceeding 30 feet, 10 inches deep and so on adding one inch in depth for every four feet of additional length, all other numbers to be in proportion. All collar beam principals to have all their scantlings increased in strength at least two fifths more. All trussed principals, purlins, or other roof timbers, where exposed, to be wrought smooth and chamfered or moulded as shewn on the drawings, or as may be found necessary in the course of construction.

Ornamental iron work.

Wherever scantlings are figured on the drawings, such dimensions are to be taken, notwithstanding the foregoing scale.

Lanterns and skylights.

The whole of the framed principals to be bolted with one inch wrought iron bolts, having when exposed ornamental nuts, washers and heads, and to have also ornamental straps and bolt heads and nuts as may be shewn or required or directed hereafter.

Rolls and hips.

Wherever any lanterns or other skylights are shewn or necessary, the whole of the timbers interfered with are to be properly trimmed and framed, and to have all necessary strong trimmers, brackets, curbs, throated sills, linings, moulded and quirk beaded fascias, &c., complete.

Trap door.

All hips and ridges to have pine rolls  $2\frac{1}{2}$  diameter screwed on.

Provide and fix in roof, at top of staircase leading from turret to lantern of library, a trap door of  $1\frac{1}{2}$  inch well seasoned pine, with ledges to fit over trimming in roof, this trap to be 3 feet by 5 feet, with mitred borders, and 3 straps at bottom, properly case round, hung with 16 inches strong T

hinges and provided with strong locks or bolts as pointed out by the Architects.

Provide and lay through the whole length of roofs, where-<sup>Plank floors and roofs.</sup> ever practicable, a plank flooring 2 feet 6 inches wide, edge nailed to ceiling joists or roof timbers and straight jointed.

The whole of the roofs to be boarded  $1\frac{1}{2}$  inch sound white <sup>Boarding.</sup> pine boards, no boards wider than 9 inches, laid close and all of even width throughout their length and every joint broken, also to have 2 inches x 1 inch slate battens in long <sup>Battens for slates.</sup> lengths.

In every case where the bearing of the ceiling joists exceeds <sup>Binders.</sup> 10 feet, there must be binders introduced not exceeding seven feet apart, unless otherwise directed. The binders to have a sectional strength of not less than half an inch in thickness and one inch in depth for every lineal foot of bearing.

The joists to be framed to the beams, and the beams to be severally framed to the principals or otherwise carried thereby on the walls.

The deck roofs throughout to be framed on the same prin-<sup>Deck roofs.</sup> ciple as specified for the floors, having the scantling of the beams and joists proportioned according to the same formula hereinbefore specified for floors, and to have in addition thereto proper furring pieces 3 inches thick, and with a slope of not less than one in fifteen, more where shewn and hipped to fall four ways or otherwise as may be shewn or directed.

The boarding to be in two thickness of  $1\frac{1}{2}$  inch each in <sup>Boarding to ditto.</sup> boards not wider than six inches, laid close and well nailed, the upper thickness to be grooved and tongued, and laid to break joint with the lower thickness.

Every deck to have a properly framed trap and hatchway 3, <sup>Hatchways.</sup> feet square, with 6 x 3 rebated weathered dovetailed and raised curb. Box of the hatch to be 4 inches deep, all made of  $1\frac{1}{2}$  inch pine and prepared for metal covering, and to have  $2\frac{1}{2}$  inch rolls for lead. <sup>Rolls for lead.</sup>

The hatchways over staircase in roof of library to be 5 x 3 hung folding.

The roofs over both houses to have handsome and wrought <sup>Roofs of houses.</sup> collar beam trussed principals as shewn, deeply moulded according to detail drawings, one cut enrichment in each prin-

- cipal. The panels to be formed with mouldings, &c. as shewn.
- Panels of glass.** The panels in flat part of ceiling are to be glazed in glass provided by glazier
- Ventilating flues.** The space, between the trussed collar beams and rafters, to be filled in with pierced work according to drawing, and the spaces thus formed to serve as ventilating flues. Pierced work is also to be fixed round in panels so as to raise the frames receiving the glass.
- Moulded cornice.** Moulded cornice as shewn, the carved enrichment not to be included. The cornices to be bracketted, blocked and tongued, &c. and securely fixed.
- Ceilings of wardrobes, &c.** The ceilings over wardrobes and the rooms adjoining and over reading rooms, and smoking rooms, picture galleries, corridors, staircases, lobbies and public entrance, and committee room in tower to have ceilings of wood, wrought, framed, and moulded as shewn with one carved enrichment.
- Cornices of wood.** The cornices of the above rooms not to exceed a foot in girth, some spaces to be left in the mouldings of these panels to afford ventilation.
- Boarding to ditto.** All wood ceilings to be formed of  $\frac{3}{4}$  inch wrought rebated, double stop chamfered boarding, securely side nailed to the ceiling joists finished complete.
- Turret roof.** The turret roof over staircase in library to be framed in the best manner, with 9 inches x 6 inches plates and pole plates, rafters, purlins in scantling as specified for the roofs generally; at every ten feet in height 12 x 4 cross-trees halved. The mast to be 8 x 8 brought down to the ceiling and bolted.
- All other timbers necessary are to be included.
- Ceiling of ditto.** The ceilings of this turret staircase to be panelled in wood with simple chamfers.
- Dormers.** Construct all dormers, as shewn or necessary, with carved ribs cut out of three inches stuff wrought, moulded, chamfered, &c., according to the drawings, with cut brackets, &c, complete. The valleys, rafters, ridges; and other timbers to be of the same scantling as before mentioned for the roofs.
- Window frames for ditto. Truncated roofs.** The window frames will be specified hereafter. The truncated roofs to be formed as shewn or requisite, and to have framed and trussed principals, having scantlings of the

strength before described, to have 12 x 6 curbs dovetailed at the angles, the flats to be laid as before described, with proper joists.

In all cases where chimney shafts are in the slope of the roof, saddles are to be formed on the upper side to prevent lodgment of snow. <sup>Saddles to chimney shafts</sup>

It is to be distinctly understood that the whole of the roofs are to be made perfect, with all necessary struts, ties, trimmers, templates, fillets, tileing pieces, &c., and with all necessary bolts and straps of iron, and also all proper gusset pieces, gablets, deckings, &c., having the same size rafters, pitching pieces, plates, and boarding as the adjoining roofs, and throughout to be free from chimney gutters, or other obstructions which may cause lodgment for snow. <sup>Roofs generally.</sup>

Quartered partitions, where tinted yellow on the plans, to be properly framed, trussed, braced, and bolted where necessary. Every partition must be trussed from the door head or sill, no studs are to be halved to a single joist, the sills are to be supported where practicable on short pieces framed between two joists. <sup>Quartered partitions.</sup>

Heads and sills, . . . 6 x 4	} ½ inch bolts with nuts and plates to all braces ½ x ¾, and straps to all door posts.
And wall piece, . . . 6 x 4	
Braces and door heads, . 6 x 4	
Common studs, . . . 6 x 2	
King & Queen bolts, . . 6 x 4	

The whole of the skirtings throughout the buildings are to be prepared and fixed in the best and most workmanlike manner, to be scribed down to the floors, and to have back fillets on the floors, to be securely fixed to wood bricks which must not be at a greater distance than 30 inches apart. To be accurately mitred on the outside, and neatly scribed and cut in the inner angles. Proper grounds not less than 3 inches wide, back splayed for plaster, and fixed level and true on the face. Whenever the floors are to be stepped or raking, the base mouldings are to be carefully ramped to follow the rake, to be properly broken round all projections. The whole complete in every respect, and to have all holes plugged or veneered, preparatory for staining. No base moulding is to be fixed until plastering is complete, or without a written consent obtained from the Architects. <sup>Skirtings.</sup>

- Skirtings.** The skirting of Houses to be  $1\frac{1}{2}$  inch clean white oak, 15 inches in height, with double face and chamfered edge, and a 4 inch moulding on the top.
- All other skirtings to wood floors to be  $1\frac{1}{2}$  inch clean wrought red pine to average 9 inches in height, and to have chamfered edges, and  $2\frac{1}{2}$  inches moulding on the top.
- Staircases.** The two public staircases and two Committee staircases and the Member's stairs to basement and Ladies stairs to gallery,
- Hand-rail.** to have solid moulded continuous hand-rail of white oak to finish 5 inches x 3 inches, with scroll worked out of solid for curtail step rails to be continued round well holes ; landing at top in every respect to match, and to be polished. To put to staircase leading to dining rooms for Members, handrails of oak  $3\frac{1}{2}$  inches diameter, polished and fastened to the walls by suitable iron brackets. The staircase in Library roof to have moulded handrail 3 inches, of pine, secured to plain iron balusters.
- Step ladders.** Construct step ladders in roofs over houses in main tower, and where requisite to lead to trap doors, or from one roof to another, to have 12 x 3 sides and 9 x  $2\frac{1}{2}$  treads, the treads to be framed to the sides, and each step ladder must have three bolts of  $1\frac{1}{2}$  inch wrought iron with nuts, plates, &c., complete. Strong wrought iron hooks with eyes to the top of each ladder.
- Water closet partitions.** Construct the closet partitions, where tinted yellow, with 4 x 3 heads, sills and braces, 4 x 2 studs, properly framed, of white pine.
- Seats in W. C.** The seats and risers to be  $1\frac{1}{2}$  inch wrought and cross-tongued white oak, all securely fixed on 4 x 3 halved bearers, &c., proper  $1\frac{1}{2}$  inch wrought, square framed and double chamfered flush panel flaps, hung with  $2\frac{1}{2}$  inches brass butt hinges and screws complete, framed and beaded margin framing, all of white oak, holes to be properly cut and dished, beaded handle holes complete.
- Casing pipes.** Case all pipes with framed and box casings ; flaps hung with hinges so as to give access to pipes in case of damage, and to have brass knobs, turn buckles complete.
- Cistern casings.** Provide and fix in roof of N. W. and N. E. truncated tower, and in roof over Speaker's Office and in two of the ventilating towers, water tank cases formed of three inches

pine dovetailed, grooved and tongued, two cases in each roof and each case 10 feet x 4 feet x 5 feet, to be supported on proper trussed bearers, &c. complete, and tied together by 1 inch wrought rods with bolts, nuts, screws, stays, &c., as requisite complete, four to each cistern.

Provide and fix over the water closets in Library and over closets in offices and Committee rooms, and over those in the apartments for Chaplain, 2 inch dovetailed, grooved and tongued cistern cases, each to hold an average of not less than 300 gallons,  $\frac{3}{4}$  of an inch wrought iron bars, two to each cistern, all fixed complete with nuts, screws and stays. Smaller cisterns.

Provide and fix all the necessary  $1\frac{1}{4}$  inch framed and moulded front and end enclosures to baths, and 2 inches rounded margins on top, the whole to be of the best white oak, and provide also all the materials and jobbing work, to make the joiners work complete to the baths. Bath casings.

The whole of the internal doors to be of the size and form shewn on the drawings, and unless otherwise specified to be 2 inches pine, six panels wrought framed double stop chamfered, and to have a  $\frac{3}{4}$  inch mitred moulding planted in. Doors of pine.

The whole to be hung with 4 inch brass butt hinges and screws to solid 6 x 3 rebated and double stop chamfered frames, framed to fit to arch, with moulded transom, and the space above filled in with pointed panels, moulded and to match doors.

The doors in public entrances to have the space above transom filled in with framed and moulded panel, the panel raised so as to allow future carving.

The ten doors leading into the houses to be framed in panels as shewn on the drawings, to be of 3 inches white oak, deeply moulded panels, one member carved, hung folding, with patent swing hinges, ornamental enamelled ware handles for opening and shutting, and each door to have long brass flush bolts. To have solid frames 6 x 6 wrought, rebated, moulded, chamfered, and to have small carved caps, &c., as shewn and moulded transom. Doors to houses.

The spandrel over to be filled in with moulded panels, and each panel to be carved, subject to be hereafter selected, such carving not to be included, but the panel taken as prepared and ready.

**Architraves.** Provide and fix architraves 7 x 2 stop chamfered, and with a 2½ bead roll to finish in a chamfered block at base, these rolls to be cut as cables in the corridors of ground, and first floor, in reading rooms, Governor General's room, Chaplain's room, picture gallery and library.

**Entrance doors.** Two pairs of doors to main entrance of 2½ inches white oak, wrought, framed, chamfered and moulded, six panels, panels to be raised, hung folding to work in groove, in masonry with iron pivot hinges, top and bottom, with ornamental wrought iron straps on both sides.

The spandrels, or door heads, in Public Hall to be filled with marble.

At the other external doors to be of 2½ white oak, framed and moulded as shewn, and hung to solid frames 6 x 4, wrought and rebated.

**Windows.** All the external windows not shewn or indicated to be glazed with quarry lights, to have solid, wrought, and rebated frames 4 x 3, chamfered and moulded with moulded transom 6 inches in depth, ornamental carved brackets under the springing.

**Sashes.** Provide and fix in arched head of ditto a 2 inch moulded sash frame. Inside this frame, provide and fix 2 inch moulded sash with proper boxed frames, patent lines and iron weight, brass axle pulleys and best sash fasteners. These sashes to be hung single and to run up so that the bottom rail shall be level with transom.

**Inside frames.** Provide and fix on inside face of wall solid wrought and rebated frames 5 x 4 with transom and arched head, &c., as in front.

**Inside casements.** Provide and fix 2 inch moulded sash frame above transom, and 2½ inches moulded casement, sashes under, hung with 3 inches brass butt hinges, and furnished with a best casement latch, and two flush brass bolts.

Where the arched heads are not so pointed a similar arrangement to be carried out.

**Gallery front.** The gallery front to be wrought, framed, moulded and panelled as shewn. To have ornamental iron standards with scrolls (to be provided by smith) to support rail; the top rail to be of walnut 6 inches wide, 4 inches deep, and well moulded and polished.

The doors in basement appropriated for the Sergeant at Arms, and the Black Rod and Messengers, to be 2 inch pine, wrought framed, four panels, stop chamfered, both sides and hung to 4 x 3 solid frames wrought, rebated and chamfered, and to have chamfered architraves 4 inches in width.

In walls where jamb linings are shewn or are necessary, the linings to be 1½ inch pine, wrought, framed, panelled and moulded to match doors.

The mouldings of sashes, casements and bars to be selected *Sash bars.* hereafter.

Fix all ironmongery, which will be provided by the Commissioners.

Provide and fix skylights in outer roofs in situations shewn, *Skylights.* wrought, rebated and chamfered bars 6 x 2 framed into heads and sides 6 x 3 and bottom rail 8 x 3, 1½ moulded proper cases round ditto beaded screwed to the scantling.

Provide and fix all fillets to ditto for flushing, slating, &c.

To fit up the closet in Chaplain's room with one shelf of 1 *Closet.* inch deal on proper bearers, and a row of pegs under.

Provide and fix in sculleries and kitchens and pantrys of *Shelves.* Sergeant at Arms residence, and ditto for Black Rod, 600 feet run of 1 inch clean pine shelves; securely fixed on proper bearers.

The inside skylights to be of two inch pine wrought, *Inside sky-* moulded, rebated, &c., and framed into panels as shewn upon *lights.* plans.

Fan lights where shewn or requisite to be made to match *Fan lights.* other window sashes.

All entrance doors leading to wood floors to have solid oak *Door steps.* steps, with moulded nosings.

Provide and fix between outside and inside sashes—vene- *Venetian* tian blinds wrought, framed and moulded, &c., 2 inches thick; *blinds.* the part above transom to be fixed and the part below made in two, and to be hung to transom with proper rollers, &c., so as to slide into the spaces left in the walls.

(These blinds not required in rooms looking into yards). These blinds are to be executed with the best seasoned lumber and in the most workmanlike manner.

Where openings are shewn for glazing in internal walls, the *Sashes in inter-* same are to be filled with two inch framed and moulded sashes. *nal walls.*



- Architraves.** All sashes to have architraves to match doors and to have all requisite linings, backs, &c., complete in every respect.
- Angle staves.** To put to all internal projecting angles throughout the building proper,  $1\frac{1}{4}$  inch deal angle beads, or angle staves. The walls to be properly plugged for all angle beads or staves.
- Casings.** To case in under wash stands in lavatories with  $1\frac{1}{4}$  inch wrought framed, moulded and panelled casing, small door to be framed in it, and hung with brass hinges, and to have proper fastenings.
- Oak lining to Houses.** The two houses to be lined to the height of 3 feet 9 inches with  $\frac{3}{4}$  inch matched, wrought and doubled stop chamfered oak sheeting, strongly secured to three tier of grounds 3 inches x 1 inch, and to have bold moulding at top.

### FIRE-PROOFING.

- The whole of the ground and first floors throughout to have iron joists and fire-proof floors.
- Strips.** To put upon the bottom flanges of all the iron joists, stout strips or laths about 1 inch square, laid across from joist to joist  $\frac{1}{2}$  an inch apart, they may be made of any rough, sound material, first cut to the length, and then cut to the size ; the ends of the strips running on the walls to have a proper bearing.
- Flooring.** Flooring boards will be required to all committee rooms, clerks' rooms, reading rooms, smoking rooms and wardrobes, &c., the same as specified, but the joists and girders will be omitted, and in their places square wood fillets, 2 inches x 2 inches must be taken extra, as shewn on plan of fire-proofing. All fillets to be square and to have occasional struts to stiffen them.

### S L A T E R .

- Slates.** To cover the whole of the roofs, except the deck, with the best Canadian Slate from Melbourne, or other approved quarries. All slates to be sound and of even thickness. Slates to be 24 x 12. The whole to be laid with a bond of 3 inches and strongly nailed on fir battens 2 inches x 1 inch with copper nails (5 lbs. to the thousand) two nails in each slate. The courses at the eaves and ridge are to be double through-

out, and to project 3 inches over stone cornice. Cut slates wherever necessary, and no slate to be laid lengthwise. All the slates to valleys and hips to be cut and kept to a true line.

The roofs are to be banded as shewn with slates of different colour. Banding in colour.

The Architects reserve to themselves the right of directing where the different coloured slates are to be used.

The slates to Library roof, turret roof and truncated roofs, to have 3 copper nails in each slate.

All slates where the underside of rafters is not plastered, Slates in mortar. are to be in proper mortar provided and laid by Bricklayer.

The contractor for the slating is to protect and preserve the whole of the slate roofs, and make good as may be directed after all the other trades. Protecting slates.

The contractor is to be responsible for the whole of the roof covering which must be left perfect, sound and weather tight at completion.

Hips to be covered with galvanized and tinned iron 16 inches wide, to have 2½ inch rolls, in lengths not exceeding three feet, and having laps of not less than 4 inches, securely nailed with copper nails, and to have galvanized iron nails every 2 feet, on the rolls proper capping pieces at the top. Galvanized and tinned iron.

The valleys throughout the building to be lined with galvanized and tinned iron, twenty-four inches wide, no piece to exceed 3 feet in length. Valleys.

Valleys to dormers and chimney gables to be 20 inches wide in lengths not exceeding 2 feet 8 inches; the joints to lap not less than 4 inches, and to pass over walls at the top.

Flashings to all walls—apron pieces to lie on to slates 7 inches and to turn up against the walls 5 inches, and to have wall flashings 5 inches wide, turning into walls 1 inch, and well provided with oil cement stopping. Flashings.

All gables to be properly step flashed with galvanized iron averaging 14 inches wide, to lie on slates 7 inches, and with wall flashings turned into walls and under copings 1 inch. The step flashing to be worked in with the slate.

All flashings to lap at the joints not less than 2½ inches, the whole to be properly and carefully dressed down, and fixed

with galvanized wall hooks and copper nails and left complete—in cases where iron may be cut or injured in dressing, the whole injured piece will have to be removed and a sound sheet substituted.

The whole to be executed in the most perfect and workman-like manner.

**Ridges.** Where ridges are required, they are to be of galvanized and tinned iron, to have roll 3 inches diameter, and sides to lap down on slate, so as to continue the lines of the lead hip from deck roof and the edges to be cut out to match.

The whole to be securely fixed with copper and galvanized nails.

### PLASTERER.

**Mortar.** The Mortar used for the Plastering is to be compounded of the best fresh burnt Ottawa lime or other approved lime, the best clean pit sand thoroughly washed if necessary, and the best long hair. The whole to be mixed in proper proportions. The lime is to be run some considerable time before being used.

**Laths.** The whole of the Laths to be the best strong split pine heart laths, free from sap, &c., to be nailed with the best lath nails of the average weight of 5 lbs. to the 1000, the joints to be properly broken, and all large timbers are to be counter lathed so as to form a proper key for the plastering.

**Wall 3 coat work.** The whole of the walls throughout, not faced with stone or marble or otherwise specified, to be plastered three coat work.

**Ceilings.** The whole of the ceilings, not shewn or specified, to be boarded and the quartered partitions to be lathed and finished three coat work, and except as hereafter described set white with white lime.

**Hard setting.** The walls and ceilings of dining and sitting rooms, and saloon in basement, the corridors and staircases in ditto where used by members, the walls of all the Houses, picture gallery, and all the other rooms on ground and first floors, together with halls, corridors and staircases, and also all ceilings, including the Library (not specified to be boarded), to be set with hard setting of marble dust.

N. B. In the Library, the ribs are of cut stone.

The underside of all common rafters to be lathed and to have two coats rough plaster. Plaster and common rafters.

Cornices 18 inches in girth with two enrichments to be run, only in those rooms marked on the plans to have plaster cornices. Cornices.

The first two coats of plaster to be continued below the grounds, i. e. down to the floor throughout. The greatest care to be taken to key in the plaster to laths grounds, &c., all faces and angles to be kept perfectly plumb and true, and the whole of the work executed in the best and most workmanlike manner, and with the best materials.

The several water closets urinal courts and lavatories, to be lined to the height of 5 feet 6 inches, with white glazed earthenware tiles, well and securely fixed on with white cement, and finished in the best manner, and left perfect and complete. Lining W. C's.

To lime whiten three times the whole of the walls and arches in vaults and passages connected therewith as directed. Lime whiten.

To form all necessary mitres, and run all requisite beads, quirks, arrises, &c. Mitres.

All the floors tinted grey, and all floors of corridors and passages, except where marble is specified, are to be finished with Portland cement  $1\frac{1}{2}$  inch in thickness. Cement floors.

The cement is to be mixed with an equal quantity of clean washed sharp river sand, laid to the proper thickness, and finished all in one coat; the greatest care to be taken in joining the work where left off at any time, and when possible the entire surface of the floor is to be finished off by sufficient hands, so as to show no joint. Where joints have to be made, the work must be cut back to a straight edge, and the fresh work connected with it by the smallest possible joint, all joints where made are, to be parallel.

The whole of the cement used to be the best Portland cement, manufactured by Messrs. B. White & Co., Millbank, London, England, and the Contractor will be required to produce and deliver to the Architects a written guarantee from the manufacturers, that their best cement has been supplied, and used for the purpose herein described.

To run round all rooms, corridors, &c., having cement floors, cement skirtings, according to drawings. Those in Cement skirtings.

entrance hall to be as shewn. Those in corridors used by members in basement 8 inches high, with a 2 inches mould. All other skirtings in basement floor to be 6 inches high, chamfered.

**Reparation.** To make good the work about all the chimney pieces after they are set, and about all other fittings and finishings, and finally to leave the whole of the plasterer's work clean and perfect, at the delivering up of the Buildings as complete.

N. B.—The cement skirting to Library to be 12 inches high, double faced, projecting 4 inches, and to have a 4 inches moulding on the top.

### SMITH AND IRONMONGER.

The whole of the iron work to be of the best description of the sort specified.

**Cast iron.** The cast work to be perfectly clean, sharp, sound and free from flaws or air blows, and cast from correct and approved models.

**Wrought iron.** The whole of the wrought iron work to be Swedish or scrap iron well hammered, all welds to be done in the best manner, all cut screws, nuts, &c., to be in every case from approved iron.

**Air bricks.** To provide twenty cast air bricks 9 inches,—to be worked in as directed.

**Chimney bars.** To provide all necessary  $2\frac{1}{2}$  inches x  $\frac{1}{2}$  inch arched wrought chimney bars let into walls 9 inches at each end, and there turned up and down  $1\frac{1}{2}$  inch, to grip the brick work.

To provide to wall plates that may require to be cut at flues &c., proper 3 inches x  $\frac{1}{2}$  inch wrought iron strap irons, properly flanged at the ends, and bolted on to the plates with  $\frac{3}{4}$  bolts, not nearer to side of the flues than 20 inches.

To provide all necessary wrought iron bolts and straps to roof timbers, trussed girders that are hereinbefore specified in carpenter's work, so much as may be exposed, to be ornamental and worked accurately to detail drawings.

**Ties for skylights.** To provide all necessary wrought iron stay bars for skylights,  $\frac{3}{4}$  inch diameter with nuts, &c., complete, one through each longitudinally.

**Ornamental Straps.** To provide and fix to all external doors wrought iron ornamental straps finished in best style.

To Provide and fix the following bond in the centre Tower : Chain Bond.  
five tiers 3 inches x 1 inch, with 8 verticals the same size.

To Library, 4 tiers—4 inches x  $1\frac{1}{2}$  inch.

The two tiers in large dome, to be connected at angles with 3 inches screwed bolt, 15 inches in length, with large ring in centre of these bolts, so as to insert lever ; the chain bond to be turned up joints as so tapped that one bolt will draw the ends together.

The other two tiers may be connected by means of slots and bonds, turned down at ends to fit into same.

To Ventilating Towers, 2 tiers, 3 inches x 1 inch, connected as last mentioned.

To provide and fix to all vaults and in doorways leading from <sup>Iron doors.</sup> roof to ventilating tower, wrought iron doors, 2 feet 4 inches by 6 feet, of  $\frac{7}{8}$  inch iron framed, four panels square, with stout inner lining to form lock case, fitted up to shoot 3 strong wrought iron bolts, with 3 dogs at back, and the whole secured by a proper Chubb's patent lock, (the doors in ventilating shafts not to have locks,) the doors as finished are to be  $2\frac{1}{2}$  inches thick, and to be hung on strong pivots in proper rebated frames of wrought iron 3 inches x  $1\frac{1}{2}$  inch, complete in all respects.

To provide and fix in windows, shewn or described to have <sup>Stanchions and</sup> quarry lights, stanchion bars 1 inch square with ornamental <sup>saddles.</sup> heads, and let into sills and run with lead. Saddle bars  $\frac{1}{2}$  an inch x 1 inch upset or swelled out to allow the stanchion bars to pass through.

To provide and fix cast iron soil pipes 4 inches diameter ; <sup>Soil pipes.</sup> the joints all carefully made.

To Provide and erect complete a spiral staircase four feet <sup>Spiral in stairs</sup> indiameter in tower as shewn on section ; treads and risers to <sup>tower.</sup> be  $\frac{5}{8}$  of an inch thick perforated as shewn, the spandrels to be cast in one piece with the riser, also a cylinder cast in one with the riser to fit over an inner cylinder or newell  $3\frac{1}{2}$  inches outside diameter, and  $\frac{3}{4}$  of an inch thick, the inner cylinder to be in two lengths, strongly coupled with male and female joint 6 inches long, the outer cylinders to be  $\frac{1}{2}$  an inch thick, balusters to be 1 inch square, one to each tread, to be strongly fastened with pin on angle of riser and spandrel, and

to be fixed to hand-rail with a small  $\frac{3}{8}$  of an inch screw, filed off flush with hand-rail at top ; the hand-rail to be of half round wrought iron 2 inches wide ; the bases of the newells at top and bottom to be cast solid with the risers, so that the wrought iron newells can be tapped into same ; the wrought iron newells are to be turned tapering out of 2 inch rod, and the hand-rail to be swelled circular to form cap over newells ; a cast iron plate 12 inches square, and  $1\frac{1}{4}$  inch thick, to be inserted in trimming of floor to carry centre newell, also a flange 3 inches wide under bottom riser, a  $\frac{5}{8}$  of an inch landing perforated at top to land on roof, the width of three heads.

**Gallery front.** To provide and fix wrought iron pillars and scrolls for gallery fronts in houses, according to drawings or as may be necessary.

**Vane.** To provide and fix an ornamental vane to Library, as shewn, the whole to be securely fixed with bolts, &c., as requisite. The main bolt secured into the stone groin.

The whole of the iron work to be well cleaned up, and twice painted in red lead and boiled oil, after examination, but before it leaves the smithy or foundry.

**Library doors.** To provide and fix wrought iron doors in Library, framed, panelled and moulded, as shewn, and in proper rebated wrought iron frames.

**Rolled iron joists.** To provide and fix throughout the ground and first floors, except where specified to be arched below, rolled iron joists on Fox and Barrett's patent. They are to be placed 20 inches from centre to centre, and to bear 9 inches on the walls at each end.

The size of joist to be regulated according to the length of bearing by the memorandum attached to the drawing, and are to be thoroughly coated with paint or tar, previously to their leaving the mill.

Iron joists of larger size, prepared to a given pattern, are to be placed as girders to the staircases, and in any other situation where they may be required to receive the ends of intermediate joists ; and also for trimmers to fire-places, &c.

**Ornamental ballusters.** To provide and fix to all staircases, ornamental cast iron ballusters and newels, according to detail drawings to be fur-

nished, to be securely dowelled into stone steps and landings, and run with lead ; and screwed at top to the oak hand rails with proper flanges and screws.

#### P A I N T E R .

The whole of the external wood and iron work usually painted, to be painted 4 coats of the best oil color, of such tints as may be hereafter chosen.

All external and internal iron work where exposed to be finished—unless otherwise directed. Chinese blue, all points, vanes, &c., and terminals, to be richly gilt.

All oak work to be twice oiled in the best manner. The <sup>Varnishing.</sup> whole of the internal wood work to be cleaned, stained, and twice varnished with best bright copal varnish, and finished such shades as may be hereafter directed.

The whole to be well knotted, puttied, pumiced, and finished in the best manner, and left clean and perfect at the completion.

#### G L A Z I E R .

The whole of the windows of offices to be glazed of the <sup>Glass.</sup> sizes shewn upon the drawings, and detail drawings, and as may be hereafter described—with best 26 oz. Chance's sheet glass.

The inside sashes in Speaker's apartments and in reading rooms, to be glazed with the best polished British plate glass, in squares as shewn. All windows in corridors looking into yards, in messenger's apartments, and in dormers to be glazed with best German sheet glass. The whole to be well bradded, puttied and back puttied, and left clean at completion.

The skylights to be glazed with Chance's patent rough plate <sup>skylights.</sup> glass 30 oz., and internal skylights with ground sheet glass 26 oz.

The windows of houses and wherever else shewn to have <sup>Quarry lights.</sup> quarry lights, to be glazed with diapered glass of the value of 4s. per foot, leaded up with strong church lead, properly cemented and tied to saddle and stanchion bars (to be provided by smith) with copper wire.



Casements of  
wrought iron.

In each window of the houses, two compartments are to have wrought iron casements (provided by smith).

To provide and fix in floor, committees, staircase rough plate glass  $\frac{1}{4}$  an inch in thickness to light basement stairs, the plates of glass to be let into the stone or cement floors, in proper frames, and properly stopped all round.

The whole of the glazier's work to be done in the best and most workmanlike manner, with the best materials of their various kinds, and the whole of the glass to be left whole and complete, and clean and perfect at the final rendering up of the buildings.

### P L U M B E R .

Deck roofs.

The flat deck roofs and lantern of Library to be laid with mill lead 7 lbs. to the superficial foot properly rolled at the lateral joints ; rolls not to exceed 27 inches apart, and where these flats or deck roofs abut against walls, the lead is to be turned up 9 inches, when against slopes 13 inches, and the lead is to be dressed down over roofs 9 inches. Flashings of mill lead 5 lbs. to the superficial foot, to turn down 7 inches, and to be let into groove in walls 1 inch, and where requiring to be laid stepwise, to be of an average width of 15 inches. To provide and fix to all skylights aprons of 7 lbs. lead 12 inches wide. To cover all hips on these roofs with 5 lbs. lead 20 inches wide, properly dressed down and lapping 4 inches at the joints.

The whole of the lead to be well secured to rolls  $2\frac{1}{4}$  inches diameter, with leaded or copper nails.

To cover trap doors with 7 lbs. lead, with flashings, &c., complete. Great care to be taken in all cases for protection against weather.

Lining cisterns.

Line the several cisterns specified in the carpenters' work, with mill sheet lead 7 lbs. for bottoms, and 6 lbs. for sides, well nailed over the tops and soldered with one lb. of solder to the lineal foot. The tie rods to be covered with medium pipe, and the ends well soldered.

Water closets.

To fit up all water closets with Queen's ware, pan closet apparatus with all necessary levers, traps, &c., complete.

# RECOMMENDATION.

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**Gas.**

All the piping to be of lap welded iron tubing : the leading mains to be 2 inches and branches to be  $1\frac{1}{2}$  inch,  $1\frac{1}{4}$  inch, 1 inch,  $\frac{3}{4}$  inch and  $\frac{1}{2}$  inch, and  $\frac{3}{8}$  inch, to be run as hereafter directed by the Architects or Clerk of the works.

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# A LIST

Of Questions and Answers affecting cost or quality of any of the Work shewn on the Drawings or described in the Specification of the Parliament Buildings.

## QUESTIONS.

Will all the eaves of the inner courts have gutters and of what size and material. See drawing No. 18 ?

To what extent are the panels in corridors on first floor between Legislative Chambers and Committee rooms to be glazed ?

Are all the doors from corridors and between Committee rooms, &c., to be arched, drawing No. 10 shews square for inner doors ?

Are the lifts to be lined with wood ?

What weight is the galvanized iron to be ?

What is the width on the face of buttresses to lantern of Library ?

Ribs of Library are specified of stone but are shewn of marble, which is correct ?

## ANSWERS.

Tower walls to be five feet above first floor. The inside face of them finished in rough rubble.

No eaves gutter in any part of the building.

The glazed panels in ceilings over corridors on first floor between Committee rooms and Legislative Hall, to be forty five (45) feet in length in both cases.

Specification right as regards doors, the square door to governor's room should have been altered. Page thirty-eight (38) clause the spandrels of door heads in Public Hall to be filed with marble should have been omitted before specified to be of wood.

The ribs in corridors and rooms with paneled ceilings will be placed so as to form panels as square as possible.

All lifts to be lined with three quarter inch sheeting.

Galvanized iron to be twenty four (24) gauge, seventeen (17) oz.

The buttresses to lantern of Library eighteen (18) inch face.

Ribs of Library *specified stone and shewn on drawings, marble*, to be Ottawa limestone rubbed.

## QUESTIONS.

## ANSWERS.

Are windows in Public Hall and staircases, and staircase windows in Library to have double or single tracery?

Is the backing of walls of six angle towers over Committee rooms to be brick or rubble? should there be floors and shutters in roofs?

How are the horizontal rafters of Library to be taken?

Windows in Public Hall and staircases and Library staircases to have single tracery.

Galvanized iron for hips and valleys, twenty four (24) guage.

See page 4 for lining of walls, page 30, for floor in roofs. No shutters in roofs required.

At the three inch guage as other rafters, but the depth ascertained by the rule for purlins.

Lantern of Library to be covered with best I. C. tin, instead of seven (7) pounds lead as specified.

Page forty (40) "fix all ironmongery which will be provided by Commissioners," refers only to locks.

Ordered, pages 8 and 9. The pillars, bases, arch moulds and balustrade in Public Hall and Members' corridors, and in saloon, in basement, also the balustrade to the entrance steps to be executed in Ohio or other equally good sandstone, and not in marble as specified.

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## SCHEDULE

Of fixed Rates and Prices for Labor and Material supplied on the ground and required in the erection of the NEW PARLIAMENT BUILDINGS, City of Ottawa, forming the basis of the accompanying Estimate and Tender. The scale of rates here following to be allowed in valuing work for progress estimates, as well as for alterations, additions, or works dispensed with,—to be measured and calculated solely by the Architects or the Clerk of Works.

EXCAVATOR.			\$ Cts.
1. Digging in earth, clay or gravel, and wheeling or levelling within 50 yds.....	per yard, cube.....		0 21
2. do in rock, do do do.....	"		0 52
3. do in earth, do do within 100 yds.	"		0 25
4. do in rock, do do do.....	"		0 56
5. do within any part of the property,.....	"	{ add 3 cts on either	
6. Digging and refilling for drains, not exceeding 5 feet deep.....	per yard, lineal.		0 88
7. do do do do 8 do	"		1 23
8. do do do do 12 do	"		2 10
9. Laborer .....	per day.....		0 80
10. Cart, horse and driver.....	"		1 50
11. Waggon, team and driver.....	"		2 70
MASON AND BRICKLAYER.			
12. Pit sand delivered.....	per yard, cube.....		0 42
13. River or drift sand delivered.....	"		0 52
14. Common lime.....	per bushel.....		0 11
15. Water lime.....	"		0 56
16. Common lime rubble mortar in the work....	per toise.....		0 70
17. do do brick do do .....	per 1,000 .....		0 87
18. Water lime rubble do do .....	per toise.....		2 10
19. do do brick.....	per 1,000.....		2 45
20. Rough concrete.....	per yard, cube.....		1 58
21. First-class concrete.....	"		2 60
22. do do water lime.....	"		3 15
23. Pugging of coarse mortar for floors.....	per square.....		0 42
24. Lime-stone for rubble.....	per toise of 54 feet.		0 87
25. Rubble walling for foundations and backing as per specification.....	"		3 50
26. do in water lime.....	"		4 72
27. Facing rubble, as per specification.....	per yard, super....		0 52

MASON AND BRICKLAYER.—*Continued.*

		\$	Cts.
28. Bricks, common red, delivered.....	per 1,000.....	3	85
29. do facing.....	" .....	4	37
30. do chamfered for jambs and splays.....	" .....	4	90
31. Brickwork, common, in lime mortar.....	" .....	6	47
32. do do in water lime.....	" .....	7	70
33. Rubbed or guaged arches.....	per foot, super.....	0	35
34. Rubbed and guaged white brick in groins.....	per yard, super.....	1	75
35. Hollow Moulded bricks for groining of Library.....	" .....	0	87
36. Rubbed and guaged arches, edges chamfered...	.....	0	56
37. Tuck pointing in dark mortar for bricks.....	per yard, super.....	0	52
38. Pointing with dark mortar masonry, as per specification.....	" .....	0	09
39. Bricks on edge for back hearth.....	" .....	0	87
40. Fire bricks.....	per 1,000.....	35	00
41. Brick arches, 9 inches.....	per yard, super.....	0	66

## DRAINS, EXCLUSIVE OF DIGGING.

42. Stoneware pipes, as per specification, 4 inch...	per yard, lineal....	0	42
43. do do do 6 " ..	" .....	0	73
44. do do do 9 " ..	" .....	1	05
45. do do do 12 " ..	" .....	1	26
46. Bricklayer.....	per day.....	1	48
47. Laborer.....	" .....	0	78
48. Iron Cramps.....	per lb.....	0	09
49. Copper do .....	" .....	0	53

## STONE CUTTER.

50. Native sand stone, best quality, in blocks, delivered .....	per foot, cube.....	0	50
51. Ohio stone, best quality.....	" .....	0	45
52. Perth stone.....	" .....	0	28
53. Caen stone, best bed.....	" .....	0	70
54. Arnprior marble.....	" .....	1	05
55. American marble.....	" .....	2	10
56. Other marble, light colour, Canadian.....	" .....	1	40

The following for Labor, cutting and fixing only, at per foot super.

	Rough bush hamm'd.	Fine bush hamm'd.	Rubbed.	Sunk.	Moulded	Cham- fered.
	\$ Cts.	\$ Cts.	\$ Cts.	\$ Cts.	\$ Cts.	\$ Cts.
57. Native sand stone...	0 17	0 23	0 33	0 56	0 53	0 42
58. Ohio .....	0 13	0 16	0 22	0 35	0 31	0 24
59. Perth.....	0 17	0 23	0 33	0 56	0 53	0 31
60. Caen.....	0 11	0 18	0 17	0 35	0 31	0 24

STONE CUTTER.—*Continued.*

		\$	Cts.
61.	Arnprior marble, polished..... per foot, super.....	0	53
62.	Marbles from Lower Canada..... “ .....	0	60
63.	Other marbles, light..... “ .....	0	60
64.	3 inch Ohio stone for hearths..... “ .....	0	35
65.	3 inch Arnprior or other marble hearths..... “ .....	0	70
66.	Fine bunched steps. Ohio stone..... “ .....	0	56
67.	do do lime stone..... “ .....	0	67
68.	Arnprior marble, do rubbed..... “ .....	1	26
66.	4 inch landings, Ohio stone, fine bunched.... “ .....	0	45
70.	4 inch do Arnprior marble, rubbed..... “ .....	0	77
71.	Stone-cutter..... per day.....	1	57
72.	Carver ..... “ .....	2	45

CARPENTER AND JOINER—MATERIAL DELIVERED PER 1,000 FEET, B. M.

	1 inch.	1½ inch.	2 inches.	2½ inches.	3 inches.
	\$ Cts.	\$ Cts.	\$ Cts.	\$ Cts.	\$ Cts.
73. Boards, common yellow pine..	8 40	8 40	7 70	7 00	7 00
74. do clear do do...	11 90	13 30	12 60	11 90	11 90
75. do common red pine.....	9 10	9 10	8 40	8 05	8 05
76. do clear do .....	16 10	16 10	15 40	14 70	14 70
				1½ inch.	2 inches.
				\$ Cts.	\$ Cts.
77. Flooring, yellow pine first quality, perfectly clear.....				16 10	16 10
78. do do second do .....				13 30	13 30
79. do red pine first do perfectly clear.....				17 50	17 50
80. do do second do .....				14 00	14 00
81. do white oak first do perfectly clear.....				25 20	25 20
82. Common scantling, yellow pine..... per 1,000 ft., B. M.					7 70
83. Clear do red pine .....					11 90
84. Common do do .....					8 40
85. Clear do do .....					15 40
86. Oak in scantling.....					25 20
87. do in boards or plank.....					25 20
88. Joisting as per specification, yellow pine.....					9 80
89. do do do red pine.....					11 90

LABOR AND NAILS—MATERIAL INCLUDED.

90. Framing concealed roofs, timber rough..... per 1,000 ft., B. M.	20 30
91 do in open roofs, timber wrought.....	35 00



LABOR AND NAILS—MATERIAL INCLUDED.—*Continued.*

	\$	Cts.
92. Framing in floor joisting.....	15	40
93. do in ceiling do .....	15	40
94. do in quartered partitions, yellow pine. per foot run.....	0	03
95. do do trussed, do .....	0	04
96. do trussed girders.....	0	28
97. do in bond timbers, wall plates. &c., yellow pine.....	0	03

MATERIAL AND LABOR AND EVERY THING NECESSARY TO EACH  
ITEM MEASURED IN THE WORK.

98. Centreing.....	per yard, super....	1	05
99. Bracketing and cradling for cornice, measuring cornice.....	per foot, super.....	0	11
100. Battening walls for lathing.....	per square.....	1	40
101. Sound boarding on fillets.....	" .....	1	57
102. Roof boarding for slating, yellow pine.....		2	45
103. Roof do for metal covering.....		4	20
104. 1½ inch 1st quality flooring yellow pine.....	per square.....	3	50
105. 1st quality flooring white oak.....	" .....	5	25
106. 2 inch doors four panels moulded.....	per foot, super....	0	28
107. do six do do .....	" " .....	0	30
108. do eight do do .....	" " .....	0	35
109. 2½ do four do .....	" " .....	0	53
110. do six do .....	" " .....	0	60
111. do eight do .....	" " .....	0	70
112. 12 in. Single faced moulded skirtings.....	per foot, run.....	0	17
113. 12 in. Double faced, moulded.....	" .....	0	35
114. 18 in. Doubled faced, moulded.....	" .....	0	56
115. Jamb linings, as per specification.....	per foot super.....	0	25
116. Window sashes, fixed with all requisite frames, fastenings, weights, pullies, &c.....	" .....	0	35
117. Moulded casements, do .....	" .....	0	24
118. Oak match boarding, as per specification.....	" .....	0	09
119. Architraves moulded plain.....		0	13
120. do do carved.....		0	18

## STAIRCASES.

	White Pine.	Red Pine.	Oak.
	\$ Cts.	\$ Cts.	\$ Cts.
121. 1½ threads, risers, moulded strings, carriages, per step complete, as per specification, including hand-rail.....	4 20	4 90	7 00
122. 2 in. do do .....	5 25	6 06	7 75
123. Carpenters.....per day.....	1 50		
124. Labourer .....	0 78		
125. Wood-Carver.....	2 45		

TIN SMITH.

		\$	Cts.
126.	Step flashing in galvanized and tinned iron... per foot super.....	0	16
127.	Hips and ridges do do do .....	0	19
128.	Valleys do do do .....	0	16
129.	Tin Smith..... per day.....	1	50
130.	Labourer..... " .....	0	80

SLATER.

131.	Melbourne slates, laid as per specification..... per square.....	6	70
132.	Slater .....	1	50
133.	Labourer..... " .....	0	80

SMITH AND FOUNDER.

134.	Ordinary castings..... per cwt.....	3	15
135.	Cast iron in girders..... " .....	2	30
136.	Wrought iron in bars, bolts, straps, heads, shoes, nuts, screws, &c..... " .....	12	60
137.	Ornamental cast iron for railing..... " .....	5	00
138.	do Wrought iron..... " .....	17	50
139.	do do in vane..... " .....	14	00
140.	do do in chain bond..... " .....	7	00
145.	do do iron doors and frames " .....	12	60
146.	do do in Saddle bars and Stanchions.....	9	00
147.	Wrought iron casements and frames.....	14	00
148.	Hoop iron for bond delivered.....	5	00
149.	Smith .....	1	50
150.	Labourer..... per day.....	0	80

PLASTERER.

151.	Lath and Plaster, 3, coats in partitions..... per yard, sup.....	0	18
152.	do do hard finish..... " .....	0	22
153.	Plastering 3 coats on Walls..... " .....	0	15
154.	do do hard finish..... " .....	0	18
155.	Lath and Plaster Ceilings..... " .....	0	19
156.	Lime Whiting, 2 coats..... " .....	0	03
157.	Plain Plaster Mouldings, including Mitres.... per foot, super.....	0	16
158.	Plasterer..... per day.....	1	50
159.	Labourer..... " .....	0	80
160.	Portland Cement for Floors..... per yard, super....	0	56

PAINTING AND GLAZING.

161.	Size and Stain Varnish, 2 coats..... per yard, super....	0	11
162.	do do 3 coats..... " .....	0	13
163.	Knotting, Stopping and Painting, 4 coats.... " .....	0	14
164.	Gilding..... per inch.....	0	01

PAINTING AND GLAZING.— <i>Continued.</i>			\$	Cts.
165. Finishing in Blue.....	per yard, super....		0	15
166. Glazing 16 oz. Chances Sheet.....	per foot, super....		0	14
167. do 21 oz. do .....	" .....		0	17
168. do 26 oz. do .....	" .....		0	21
169. do 30 oz. do .....	" .....		0	25
170. do 16 oz. do in lead quarries...	" .....		0	21
171. Painter.....	per day.....		1	50
172. Glazier.....	" .....		1	50
PLUMBER.				
173. Milled Lead.....	per cwt.....		7	00
174. Cast do .....	" .....		7	00
175. Medium Pipes.....			7	70
176. W. C. Apparatus.....	each.....		17	50
177. Wash Basins and Stands in Lavatories.....	" .....		5	00
178. Plumber.....	per day.....		1	75
179. Laborer.....	" .....		0	80
All works not enumerated to be valued by the Architects.				

# DEPARTMENTAL BUILDINGS, OTTAWA CITY, C. W.

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THIS INDENTURE made this Seventh day of December, in the year of Our Lord one thousand eight hundred and fifty-nine, between RALPH JONES, of the Town of Port Hope, in the County of Durham, Esquire, EDWARD HAYCOCK, of the same place, Esquire, and THOMAS C. CLARK, of the same place, Civil Engineer, carrying on business as Contractors for building under the firm of « Jones, Haycock and Company, » and hereinafter throughout designated as « The Contractors, » of the first part, and HER MAJESTY QUEEN VICTORIA, represented herein by the Honorable THE COMMISSIONER OF PUBLIC WORKS, of the Province of Canada, hereinafter throughout designated as « The Commissioner, » of the second part.

**W**HEREAS the Government of the Province of Canada have, in pursuance of an Act of Parliament of the said Province, and of certain Resolutions to that effect of the Legislature of the said Province, determined to erect buildings at the City of Ottawa hereinafter mentioned for the use, occupation and accommodation of the Legislature and of the several Public Departments, of Her Majesty's Civil and Militia Service of Canada ; and Whereas for the purpose of carrying the same into effect, Plans and Specifications have been prepared for buildings, for the use and accommodation of the several Public Departments, of Her Majesty's Civil and Militia Service of Canada, and of the Officers and Servants thereof, (and which buildings are hereinafter throughout designated as « The Departmental Buildings, ») by Messrs. Stent and Laver, the Architects thereof ; And Whereas the Contractors have agreed to and with Her Majesty the Queen to erect, build and complete the several buildings, and

to supply all proper and requisite materials therefor, upon the terms and subject to the conditions, stipulations and agreements hereinafter contained—Now this Indenture witnesseth, That in consideration of the sum of Two Hundred and Seventy-eight Thousand, Eight Hundred and Ten Dollars, of lawful money of Canada, to be paid to the Contractors, their Executors, Administrators and Assigns, by Her Majesty, Her Heirs or Successors, in manner hereinafter mentioned—They, the Contractors, do and each and every of them, doth hereby for themselves and himself, and for the Heirs, Executors, Administrators and Assigns of themselves and himself respectively, jointly, and severally covenant, promise and agree, to and with Her Majesty the Queen, Her Heirs and Successors in manner following, that is to say :

1. They, the Contractors, shall well, truly, and faithfully build, erect, construct, complete, and finish in the best and most workmanlike manner, in every respect, and of the best materials of their several kinds, including the fireproofing of the whole thereof, and to the satisfaction of the Commissioner, the Departmental Buildings to be built, erected, and placed in and upon such portion or portions of the land, known as « The Barrack Hill, » in the City of Ottawa, as may be pointed out to the Contractors for that purpose, and according to the Plans and Specifications thereof respectively, and which Plans and Specifications as to the Departmental Buildings are signed by Messrs. Stent and Laver, the Architects of the said last mentioned buildings, and by the Contractors, and the Plans whereof so signed, are deposited of record in the Department of Public Works, and the Specifications whereof so signed are hereunto annexed, marked A, and a Specification of additional work to be done in making Fire-proof the Departmental Buildings, also signed and hereunto annexed, marked B, and which said papers A and B, are respectively also to be construed and read as part hereof, and as if embodied in and forming a part of this Contract, and further, that the Contractors in the erection, construction, and completion of the said buildings respectively, and in every matter or thing connected therewith, or incident or relative thereto, shall be guided and bound, by such further working detailed Plans and Instructions as may, from time to time, be furnished and supplied to them by the Architects in charge.

2. The Contractors shall and will, preparatory to or in course of erection of the works embraced in this Contract, make and complete all necessary excavations, and shall find and supply all necessary and proper scaffolding, materials, tools, implements and plant of whatsoever kind or description, for the erection, construction and completion of the said

works, and every part thereof, and shall also find and work and temporarily place, such examples of the work or moulds, or patterns thereof, in experiment to test the style or effect, and from time to time, shall alter, vary or renew the same, as the Architects in charge or the Clerk of Works may require, and further, that all materials for the said work, shall, before being used, be inspected and approved of by the Architects in charge, or by the Clerk of Works acting under their orders, and any materials disapproved of, and rejected by the said Architects or the Clerk of Works, as aforesaid, shall not be used in the works, and if not removed by the Contractors, when directed by the Architects or Clerk of Works aforesaid, then the same shall be removed by the Architects or Clerk of Works aforesaid, to such place as they may deem proper, at the cost, charge and risk of the Contractors; but any such inspection, and any approval of materials, shall not in any wise subject or make liable Her Majesty to pay the Contractors for the said materials so approved, or any portion thereof, unless employed or used in the said works, nor prevent the rejection afterwards, of any portion thereof, which may prove or turn out at any time, before the final completion of this contract, to be unsound or unfit or improper. to be used in the works, nor shall such inspection be considered as a waiver of objection to the work, or any part thereof, on the account of unsoundness or imperfection of the materials used.

3. The Contractors shall forthwith immediately commence the works embraced in this contract, and shall proceed with the same from time to time, and the same respectively, and every part and parcel thereof, shall be fully, thoroughly, and entirely completed in their several particulars, and given up, under final certificate, and to the satisfaction, in all respects, of the Commissioner and of the Architects in charge thereof, on or before the First day of February, which will be in the year of Our Lord, one thousand eight hundred and sixty-two, time being of the essence of the contract, and further that in failure of completion as aforesaid, at the period hereinbefore specially limited for the completion thereof, the Contractors shall forfeit all right, claim or demand to the sum of money, or percentage, hereinafter agreed to be retained by the Commissioner, and any and every part thereof, as also to any moneys whatever, which may be, at the time of the failure of the completion as aforesaid, due or owing to the Contractors, and that the Contractors shall also pay or cause to be paid, to Her Majesty, as liquidated damages, and not by way of fine or penalty, the sum of two hundred dollars for each and every week, and the fractional part of such sum for every part of a week for which the

works, within this contract or any portion thereof, may remain incomplete, or for which the certificate of the Architects in charge of the completion of the said works, or any part thereof may be withheld, and the Commissioner may deduct and retain in his hands, such sums as may become due, as liquidated damages, from any sum of money then due or payable, or to fall or become due, or payable thereafter to the Contractors.

4. That in case of inclement weather occurring, whether during the progress of the works, which in the opinion of the Commissioner or Architects in charge of the same, respectively, may be detrimental thereto, or during the period when the works may be suspended, in whole or in part by the Commissioner, or the Architects in charge of the said works, respectively, for the winter season or otherwise, such precautions shall be taken by the Contractors at their own outlay and cost, and without any charge or claim in respect thereof, as may in that view be directed by the Commissioner or Architects in charge, and that any such direction of the Commissioner, or the Architects in charge, shall not be taken or held in any manner whatsoever, to involve Her Majesty in any responsibility in regard to the preservation of the work, and further that if the Contractors fail in such precautions, the same may be adopted by the Commissioner, or the Architects in charge, and the Commissioner may deduct and retain in his hands, out of the percentage hereinafter mentioned, or out of any moneys which might otherwise at any time, become or fall due to the Contractors, all such sums of money, damages and expenses as shall have been incurred, defrayed or expended in the adoption of such precaution as aforesaid.

5. The care of the works under this contract and of every part thereof, and of the materials, tools, implements and every thing belonging or appertaining thereto, shall be entirely at the charge of the Contractors, and they shall be liable and responsible for all loss, damage, detriment or injury that may arise, or be sustained during the progress of the works, and until the said buildings shall have been certified by the Architects in charge as complete, and have been delivered to and received by the Commissioner on the part of Her Majesty, and further that in the event of any loss, damage, detriment or injury, the property so lost, damaged, deteriorated or injured, shall be replaced, reconstructed, restored, renewed or amended as the case may be, to the satisfaction of the Commissioner, or of the Architects in charge, and further that if the Contractors fail in the replacing, reconstruction, restoration, renewal or amendment of such lost, damaged, deteriorated or

injured property, the same may be so replaced, reconstructed, restored, renewed, or amended by the Commissioner, and the Commissioner may deduct and retain in his hands, out of the percentage hereinafter mentioned, or out of any moneys which may otherwise, at any time, become or fall due to the Contractors, all such sums of money and expenses as shall have been so incurred, defrayed, or expended by the Commissioner for such purpose, or the Commissioner may recover the same from the Contractors, as in the next succeeding clause mentioned.

6. On failure of the Contractors to complete the works herein contracted for, at the period of time hereinbefore mentioned, the Contractors shall be liable for, and shall pay or cause to be paid to Her Majesty, all percentage, salaries or wages, which shall become due to the Architects in charge, Clerk of Works, or subordinate person or persons superintending the work, on behalf of the Commissioner, from the period so hereinbefore named for completion of the works, up to and until the said works, shall actually be completed and received, and the Commissioner may deduct and retain in his hands out of the percentage hereinafter mentioned, or out of any moneys which may otherwise, at any time, become or fall due to the Contractors, all such sums of money and expenses, as shall have been so incurred, defrayed or expended, by the Commissioner for such purpose, or the Commissioner may recover the same from the Contractors, on an action in the name of Her Majesty, as moneys paid for and on account of the Contractors.

7. If it shall, at any time, appear to the Commissioner, that the establishment or the rate of progress at, in and upon the said works or any of them, or of any work or matter incident to the same, or in any way connected therewith, are not satisfactory, or such as to ensure the completion of the same, within the time hereinbefore mentioned, or on failure or breach by the Contractors, of any matter or thing herein contained, on the part of the Contractors to be done or performed, or if the Contractors shall, at any time or times, neglect or refuse to carry on this contract or any part of it, or to supply requisite and proper scaffolds, tools, implements, or plant or materials, or are unable to carry on the same, then and in any of such cases, the Commissioner may forthwith, after having given three days notice to the Contractors, of his intention so to do, and without any process or suit at Law, or other legal proceeding of any kind whatever, or without its being necessary to place the Contractors *en demeure*, either absolutely take the works, or any part thereof, out of the hands of the Contractors, and relet the same without the necessity of previous advertisement, or employ additional



workmen, and provide materials, tools, implements, and all other things requisite for the completion and performance of the contract, at the expense of the Contractors ; and the Contractors shall, in either case, be liable for all damages, and extra costs and expenditure, which may be incurred by reason thereof ; and if such damages, extra costs and expenditure, exceed in the whole, the said sum of two hundred and seventy-eight thousand, eight hundred and ten dollars, then Her Majesty may recover of and from the Contractors, the balance or excess over and beyond the said sum of two hundred, and seventy-eight thousand, eight hundred and ten dollars.

8. If any overseer, mechanic, or workman, employed on or about the works or any portion thereof, be incompetent to perform the work or duties required of him, or give just cause of complaint, the Contractors shall immediately, upon the application of the Architects or Clerk of Works, dismiss such person or persons forthwith from the works, and he shall not be employed again thereon, without the written consent of the Architects or Clerk of Works, and should the Contractors continue to employ such overseer, mechanic or workman, the Contractors shall pay to Her Majesty, Her Heirs and Successors, the sum of Twenty Dollars, as liquidated damages, and not of fine or penalty, for each and every day during which such overseer, mechanic or workman shall be employed on the works, after such application for his dismissal as aforesaid, and the Commissioner shall have the same power of retaining such sums, as may become due to Her Majesty under this clause, or of enforcing payment thereof as are given and expressed in the sixth clause of this contract.

9. That whenever, or so often as it may be necessary for the Contractors, to co-operate with any person contracting for supplying or placing the apparatus for heating the buildings, the Contractors shall diligently, and under the directions of the Architects in charge or the Clerk of Works, perform all such works as shall be requisite, or proper on the part of the Contractors for building in, securing, and placing in proper position the flues or other apparatus required for heating in a proper and secure mode, and to prevent the possibility of accident by fire therefrom, without any extra charge therefor, and shall be bound in all things, to conform to the direction of the Commissioner, touching such work.

10. That when any discrepancy exists between the dimensions, as indicated by the scale of any drawing, and the dimensions marked in figures on the plans, or on any drawings, which may be from time to time supplied by the Architects to the Contractors, for the purpose of working

therefrom, the figures are in all cases to be considered correct, and if there should be any discrepancy between the figures or dimensions, or the forms of the construction, or the material as indicated by the plans or drawings, and the dimensions and description given in the specifications, the directions of the Commissioner or the Architect in charge, shall be adopted in reference to such discrepancy, and shall be binding and conclusive on the Contractors.

11. Whenever neither the plans, drawings or the specifications, contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which minor and detailed parts are common, usual and proper in workmanship of the same, or a similar character, and which are obviously necessary to the due completion or stability of the work, all such parts, and the necessary materials therefor or the necessary tools and implements for working up the same, are to be found, completed, provided and fixed by the Contractors, and are to be considered as included in this contract, and not as extra work, it being the intention of this covenant, that all such work of every kind as may be necessary, for completely finishing the works proposed in the best and most workmanlike manner, and for the rectification of any failure, from whatever cause arising, and the well maintaining, sustaining and supporting the whole of the works, as well as any and whatever change, alteration and addition, that may be made thereon, so that the whole may remain sound and firm, are implied in the plans, specifications and drawings heretofore mentioned, although the same are not therein specifically expressed.

12. That the Contractors shall not in any way, directly or indirectly sell, dispose of, relet, assign, transfer, or sublet to any person or persons whomsoever, either entirely or partially, and jointly with himself, or in any other manner or way howsoever, this contract or any part thereof, or any portion of the work embraced herein, or to be performed hereunder, or which without being distinctly and specially mentioned herein, may yet be rendered necessary, for the full and proper completion of the contract.

13. That any notice or other paper connected with this contract, which may be required or desirable on the part of Her Majesty, may be served on the Contractors, either at his or their usual domicile, or at his or their usual place of business, at the City of Ottawa, by being left at the Post Office, and any notice or other paper so addressed, and left at the Post Office, shall to all intents and purposes be considered legally served. And the Contractors and Her Majesty the Queen do, and each of them

doth, hereby further, mutually covenant, promise and agree, the one with the other of them, the Contractors, for themselves, their heirs, executors, administrators and assigns, and Her Majesty, for Herself, Her Heirs and Successors, in manner following, that is to say :

1. That payment of any sums of money which may be made to the Contractors by Her Majesty under this contract, will be so made according to the provisions of the Act of Parliament of this Province, passed in the 22nd Section of the 22nd Vic. chap. 3, sec. 18 ; and within ten days after an estimate of the Architects in charge, shall have been received by the Commissioner, specifying the amount of work done, according to the terms and conditions of this contract, during the month then ending ; but nevertheless, the Commissioner, on behalf of Her Majesty, shall withhold from the Contractors, and retain ten per cent out of the amount of the estimates, until the perfect completion and acceptance by the Commissioner of the work, which ten per cent, so withheld and retained, shall be paid with the last instalment, unless retained by the Commissioner as hereinbefore mentioned, within ten days after the Architect in charge, shall have delivered to the Commissioner, his final estimate of the work performed, and the materials furnished, in virtue of this contract, with detailed measurements, weights and other quantities, and his or their certificate of the work having been fully completed and finished, if the Commissioner shall so soon have accepted and approved of the work ; and that in forming their final estimate, the Architects in charge shall not be bound or governed by the preceding monthly estimates, which shall be considered and taken as merely approximate. And it is expressly declared that the monthly payments, to be made to the Contractors as hereinbefore mentioned, shall be made upon the basis of the schedule of prices, hereunto annexed, marked C, to be nevertheless regulated, determined, and applied in all cases whatever, by the Commissioner or the Architects in charge, and upon none other basis or scale, and further that the presentation of the monthly estimate of the Architects in charge, shall not of itself entitle the Contractors, to demand payment of the amount to be paid as hereinbefore mentioned.

2. That it shall be in the power of the Commissioner, on behalf of Her Majesty, to make payments or advances on materials, implements, vessels, or tools of any description procured for the works, or used, or intended to be used about the same, in such cases and upon such terms and conditions, as to the said Commissioner may seem proper, and that whenever any advance or payment shall be made to the Contractors upon any tools, implements or materials of any description, the tools, imple-

ments or materials, upon which such advance or payment shall be made, shall thenceforward be vested in, and held as collateral security by Her Majesty, Her Heirs and Successors, for the due fulfilment by the Contractors, of the present contract, it being however well understood that all such tools, implements or materials of any kind, are to remain at the risk of the Contractors, who shall be responsible for the same, until finally used and accepted as part of the work by the Commissioner; but the Contractors shall not exercise any act of ownership or control whatever, over any tools, implements or materials, upon which any advance or payment has been so made, without the permission in writing of the Commissioner.

3. In this contract, the words « Her Majesty » or « Her Majesty the Queen, » shall mean Her Majesty, Her Heirs and Successors.

The words « The Commissioner » shall mean The Commissioner of Public Works, of the Province of Canada for the time being.

The words « The Contractors » shall mean the hereinbefore mentioned Ralph Jones, Edward Haycock and Thomas C. Clarke, carrying on business as Contractors for building, under the firm of Jones, Haycock and Company, and the Heirs, Executors, Administrators and Assigns, of them and each and every of them, jointly and severally.

The words « The Departmental Buildings » shall mean the buildings and erections as designed by the Architects thereof, according to the plans thereof hereinbefore mentioned, and the specifications thereof hereunto annexed, marked A, and the specification for fireproofing hereunto annexed, marked B, and to be erected for the use, occupation and accommodation of the several Public Departments of Her Majesty's Civil and Militia Service of Canada, and of the Officers and Servants thereof respectively.

The words « Architects » or « Architects in charge » shall mean Messrs. Stent and Laver, of the City of Ottawa, Architects, or such other person or persons, as may be appointed by the Commissioner to act as Architects, in the room and stead of the said Messrs. Stent and Laver.

The construction of the words given in this clause shall not control any more extended construction, which may be given to any of such words throughout this contract.

4. That if any change, alteration or addition, either in the position or details of the works embraced in this contract, or in any of the materials therefor, shall be required by the Commissioner, the Contractors will make such change, alteration or addition, and if such change, alteration or addition, shall entail extra expense on the Contractors, either in labour or materials, the same shall be allowed to the Contractors, or should it be



## SPECIFICATION

Of the several Works to be done in erecting and completely finishing two detached Buildings, on the Barrack Hill, in the City of Ottawa, (C. W.) known as DEPARTMENTAL BUILDINGS, for THE HONORABLE THE COMMISSIONER OF PUBLIC WORKS, and according to Drawings prepared by MESSRS. STENT & LAVER, Architects.

All the Works are to be executed in the best and most workmanlike manner, and all the materials are to be unexceptionable in quality, and both workmanship and materials, must be prepared and executed, to the entire satisfaction of the Commissioner and Architects.

### EXCAVATOR.

The whole of the two sites which is required for rooms on **Excavation.** the basements and the areas, is to be excavated of sufficient size and depth to build them, as shewn on the plans, the surface of the spaces so excavated being left at a perfect level, to receive the masonry. Dig one foot below the said level, trenches to receive the various walls forming the rooms, and of sufficient width for the footings, or in every case two feet wider than the thickness of the walls themselves. Excavate on the remaining portion of the two sites for all foundation walls, at an uniform depth of four feet, or starting with that depth at the lowest point, and in every case to be two feet wider than the thickness of the walls themselves, in order to receive the footings, and to be of an uniform level throughout at the bottom of the trenches, subject only to breaks in the heights or steps, to meet the unlevel nature of the ground, as shewn by the Section and Block Plan.

The general surface of the ground enclosed by the buildings **Levelling.** themselves, and not required for rooms, is to be brought to a tolerably even surface, and to be levelled to at least 3 feet below the ground floor joists,—to admit of ample ventilation.

Perform also all excavation for drains, areas, ventilating funnels, water pipes, or otherwise, required to carry on the **Removal of rubbish.**

**NOTE.**—Places of deposit for the surplus material may be obtained near the building, for road making purposes, (see Streets Commissioner.)

works ; and remove from the buildings and grounds adjacent thereto, all excavated soil, rubbish, stone, or other material to some convenient place of deposit on the Barrack Hill. The stone which may be of good quality, may be retained for use in the building. So much of the soil rubbish, chippings, spalls, &c., as may be directed to be used round about the walls, to be deposited in such forms as may be directed. The whole buildings and site to be left free from all rubbish, or useless material of any kind, at the completion of the works.

**Excavation for towers.**

The excavation for the principal Tower to be lower than the ordinary walls of the building, and to be of the depth shewn by the section.

**Filling in.**

As soon as the walls are built up to the ground level, the spaces all round are to be filled in and well rammed, the same also to the trenches for drains, pipes, and otherwise, throughout. The depth of excavation for drains to be 4 feet at the shallowest part.

**Removal of water.**

Immediate provision to be made for the thorough and complete drainage of every part of the foundations of each block of buildings, and the same is to be maintained until the works are completed, and the permanent system of drainage is in successful operation.

## M A S O N .

**Kind of stone for foundation.**

All the stones used in the building, except otherwise described, are to be the blue lime stone of the district, carefully selected. The whole of the foundation walls, and walls of the basement, (except otherwise shewn on plans,) are to be built of rough rubble masonry, of the height and thickness shewn on the plans and sections, and in every case throughout each building are to have footings of two courses, each six inches deep, and not less than four inches projection, care being taken to construct the footings of even flat stones of the largest description. Holes to be left in the walls below the floor, and cast-iron ventilating bricks built in to allow for the free circulation of air. The iron bricks to be supplied by the ironfounder.

**Stone walling and tar and gravel.**

Lay over whole of the walls, immediately below the ground-line, on a surface of brick laid flat, and built nearly to the external face of the walls, set in cement, a coating of felt,

covered with tar and gravel, not less than half an inch thick, the same to remain till it is perfectly hard, previously to being built upon, flags of sandstone for similar use, to be built over the walls of the towers, also set in cement. The upper external walls are to be built on an average of 21 inches thick, exclusive of all projections, to be in rough rubble masonry, finished on the external surface, similar to the specimens erected on the grounds for contractors' guidance, having horizontal beds and vertical joints, hammered only, and not too dressed, the pointing to be with an indented joint in blue mortar, prepared with smiths' blowings and other materials as will be directed, no joint to exceed one quarter of an inch in thickness. Such specimens are to remain until the completion of the mason's contract, and to be the standard at which all his work will require to be done. The random coursed work for ordinary walls, the rubble work in the positions shewn on the elevations. The joints to be raked out as the work proceeds to prepare for the pointing mortar.

The remaining internal stone walls are to be similarly built <sup>Hollow walls.</sup> of the thickness shewn, and are to be cased with brick-work, the external walls with a space of 4 inches between the brick and stone, the internal walls to have the brick incorporated with the stone.

All these several walls are to be constructed in the best possible manner, with good, flat, even bedded stones laid in mortar, compounded of one-third best hard burnt lime from the Gloucester quarries, and two-thirds clean sharp gravel or coarse sand, the interstices, of the stone work to be filled with stone chips or spalls, and grouted with lime and sand in a liquid state every foot in height; the mortar to be mixed, ground in a pug mill, and used fresh from day to day. <sup>Mortar for rubble work.</sup>

The architects will however reserve the right of changing the above proportions at their discretion.

Thorough bond-stones to be laid throughout all the walls, at <sup>Bond-Stones.</sup> intervals not exceeding 6 feet in length and 2 feet in height; having a bed of not less than 3 superficial feet, and a minimum thickness of 8 inches.

All the cut stone dressings are to be set in putty, the <sup>ex-Setting putty.</sup> ternal pointing to correspond with the specimen referred to.

Quoins in all cases to bed on the Walls at least 9 inches and Quoins.



to be in no case less than 15 inches long, and 9 inches wide, to rise in irregular heights and have random back joints.

### BRICKLAYER.

The Contractor may make bricks on any of the « Canal Lands » or upon such « Ordnance Lands » as may not be leased between Ottawa City and Hogsback.

**Bricks and bond.**

All the bricks used in the buildings are to be the best quality, hard burnt, free from any defect which may impair their strength and usefulness, and all to be of an uniform size. All the external walls are to be cased inside with brickwork 9 inches in thickness, leaving a space of 4 inches between it and the stone wall, and to be bonded to the stone every fifth course in height and sixth brick in length, by brick and flat bedded stones, and by galvanized hoop iron stays  $1\frac{1}{2}$  inch wide, twenty inches long and one-eighth of an inch thick, turned up one and a half inch at each end, these stays to be built in at intervals of 5 feet in length and one foot in height : the brickwork to be built up with the stone walling, care being taken to protect the spaces from being filled with mortar or otherwise. All the internal stone walls are to be cased also with bricks, built with and bonded into the stone work as it advances, but without the iron cramps referred to.

**50,000 bricks.**

The Contractor will be required to place on the site not less than 50,000 good bricks for each block, within one month from the date of signing the contract, or the date of the acceptance of his tender.

**Brickwork.**

The brickwork in the various floors is indicated by red coloring. All the remaining internal walls forming divisions of rooms, or otherwise, are to be built of brickwork : those on the ground floor, brick and a half, or 13 inches ; those on the upper floor, single brick, or 9 inches. The bricks to be set in mortar, so that no four courses of brick are to rise more than one inch above the actual thickness of the bricks themselves. All the brickwork to be built in Flemish bond for 13 inch, and in English bond for 9 inch walls, and the mortar to be composed of one-third best burnt lime and two-thirds sharp sand, also mixed in a pug mill, and used fresh from day to day, every course to be fully flushed up with

mortar, and every fourth course carefully grouted with hot <sup>Flushing and</sup> grout as before described. <sup>grouting.</sup>

Arches brick and a half thick, to be turned over on the <sup>Arches.</sup> basement where vaults occur, unless where the solid ground remains. Similar arches in every case in vaults, at the heights shewn by the sections, the space between the crown of the arch and the floor over, to be built up with rubble masonry at least two feet high ; nine inch arches, groined or otherwise, as shewn, to be turned over to receive the paving of the several entrance Halls. All chimney jambs to be in brickwork, the fire-places being 3 feet wide, 14 inches deep, and 3 feet 3 inches high ; an arch over the opening, supported in each case by an iron bar 2 inches by one-half inch, bearing 9 inches on the jambs, and turned up 2 inches at their ends.

Single brick trimmer arches to each fire-place, to receive <sup>Trimmer</sup> the hearth slabs. <sup>arches.</sup>

Brick and brick and a half discharging arches, respectively <sup>Discharging</sup> to each opening for doors, windows or otherwise, built clear of <sup>arches.</sup> the lintels.

Arches to be used in every other case were shewn and necessary.

Build all chimney flues, and flues for ventilation or otherwise, <sup>Chimney flues.</sup> also of brickwork, extending to the apex of the roof, or to the point of the roof, where it will be connected with the external shaft, which will be of stone, the corbelling over, in cases where it occurs, to be carefully done. All these flues to be pargetted with good adhesive mortar or cement, and all carefully cored at completion of the building.

Each vault is to be constructed with brickwork of the thick- <sup>Vaults.</sup> ness shewn and figured, and built in the best and strongest manner, the inside casing throughout to be done with Toronto pressed bricks, neatly laid and pointed. In every case, the vaults and Record Rooms are to be cased externally with the best English fire bricks, set in fire clay, one brick or 9 inches in thickness, and bonded or cramped to the stone work, as will be considered necessary by the architects. The walls of the Record Room to be cased inside with Toronto pressed brick, neatly laid and jointed, and left free from plastering at completion.

Window and  
door jambs.

All window and door jambs, and arches, and all quoins *on* the basement are to be brickwork ; the window benches also, except otherwise specified, to be paved with bricks on edge, laid in cement.

Pugging mor-  
tar.

Provide and lay the pugging described in carpenter's specification.

Chases for  
pipes, &c.

Chases to be left in the walls for soil and water-pipes, and for all purposes of heating and ventilation. The bricklayer is to set all grates, and perform every kind of labor required in completing the building, in respect of the various departments of work where his services are required.

Drains.

The whole of the drains are to be constructed with the patent earthenware glazed socket pipes, laid with a current, bedded in sand, and set with cement, that description of pipe being used of which half the socket is made to lay on after the pipes are fixed, for facility of access to the drain, and removing pipes without breakage.

Size of drains  
and traps.

The principal drains are to be 12 inches diameter, and all subordinate ones six inches diameter, 1000 feet in length of each to be estimated for. All connections to be by branches, either square, oblique or circular, and to be trapped at every proper point, viz : at connection with rain-water pipes, soil pipes from water closets, surface water drains, and where else may be considered necessary. These drains to be carefully cleaned inside as they are fixed. All turns in the drains to be made by easy curves, using circular pipes for the purpose : no abrupt turn to be made in any case.

### CUT STONE MASON.

Kind of stone.

All the stone used for dressings of the buildings is to be sand-stone, from Cleveland, in the State of Ohio, Malone stone, in the State of New-York, or other approved quarries, to be carefully selected, sound, and free from all stains or other blemish, and to be protected during the progress of the buildings, so that at completion, all mouldings and projections may be perfect and complete. The whole of the sand-stone dressings, including Plinths, Window and Door Jambs, Heads and Mullions, Tracery, String Courses, Eaves Course, Finials, Buttress Caps and Slopes, Parapets, Chimney Shafts, Caps and Mouldings, and otherwise, on the external fronts, are to be

wrought, moulded, and set according to the drawings and details at large, now prepared, and which will be prepared from time to time during the progress of the building, the present drawings giving a fair specimen of the general character of the whole work. All copings on parapets and other portions where the upper surface of the stone is exposed to the weather, are to be both set and joggled in hydraulic cement. The carving of stone, including Shields, Coats of Arms, Bosses, and otherwise, is to be done by first class workmen, who are thoroughly initiated into their business.

No carver will be allowed to work except under the sanction *Carving.* and licence of the Architects.

The principal entrance to be surmounted by the Royal *Coats-of-Arms.* Arms, carved in stone in relief, size, 4 feet square, and a similar shield, having the Canadian Arms, in the principal Tower.

Solid stone steps, built on rough masonry, and fenced with *Steps.* an iron railing, to be fixed in the position shewn, leading from the basement to the ground level. The gallery in principal tower, to be formed of slabs of Malone stone 5 inches thick, built into the walls, moulded, joggled, and dowelled, as will be directed.

The entrance door steps are to be bush hammered work in *Steps bush* limestone of the district, as before referred to, and set in such *hammered.* a manner as will hereafter be directed by the Architects. Each step to be in a single stone.

All the rooms of the basement, except otherwise described, *Stone paving.* are to be laid with stone paving on a substratum of 6 inches of dry rubble.

Coping 6 inches thick, weathered and throated, are to be *Copings to* laid over the walls, having a projection of 3 inches on each *areas.* side, dowelled and joggled at the joints.

Perform all labour required in cutting and setting the sand- *Cramping.* stone dressing, in joggling, dowelling, cramping, and otherwise working it as may be ordered from time to time by the Architects, till the completion of the buildings.

Perform also all labour required in cutting holes for pipes of *Jobbing.* various kind, or in cutting corbels, bearings for timber, or in any other way required by the various artificers, in carrying out the several departments of the contract.

**Chimney-pieces.**

Provide and fix in each room having a fire-place, a chimney-piece of Arnprior marble, made according to drawings which will hereafter be provided by the Architects. The patterns may be varied to suit the rooms,—those in the Governor General's Departments, and in the rooms occupied by Chiefs of Departments and the Deputy Chiefs, to be of the prime cost value of 36 dollars. The remaining rooms to have chimney-pieces of the value of 24 dollars.

**Hearth-stones.**

Each fire-place to have also an approved potsdam sand-stone hearth slab, size 4 feet 6 inches long, 1 foot 9 inches wide, and 3 inches thick, set in mortar on the brick trimmer arches. Inner hearths to be also of the same material.

**Basement chimney-pieces.**

Chimney pieces on the basements, to be of plain stone, with hearth as before described.

**Stone cut on the works.**

All stone cutters' and carvers' work must be executed at the works, unless by special permission to the contrary, which the Architects will only grant in very exceptional or urgent cases, and certainly not at all in relation to carving.

**Relieving arches.**

The external arches of the windows and doors, to be formed as shewn on the drawings, with sand-stone, in two varieties of colours, the red stone from Malone being used in contrast with the lighter stone.

**Hall and basement floors.**

Each of the Entrance Hall floors, terminating at the inner doors, is to be formed of a bed of concrete, 9 inches in thickness, and upon that a layer of finer concrete  $1\frac{1}{2}$  inch thick, formed of gravel about the size of a pea, and clean sharp sand and hydraulic lime, and on this a layer of Portland cement  $1\frac{1}{2}$  inch thick, mixed with a proper proportion of fine sand, this finishing coat to be laid by the Plasterer. The cement is to be laid in the best and most workmanlike manner and as will hereafter be directed, and so floated that no joint or unevenness may be seen after completion. The concrete to be formed of the best well burnt hydraulic lime (fresh burnt) mixed in the proportion of one part of lime to seven parts of gravel, sand and broken stones. The lime is to be ground under the edge runners, and left dry under cover in bags till required for use. The paving of the basement rooms and passages, to be formed with the same material.

**Entrance porch.**

The entrance porch is to be constructed with sand-stone, as before specified, the piers, arches, frieze, cornice, &c., being

in large blocks, cramped and dowelled together in the strongest manner; the ceiling to be groined in stone built over with rough masonry, and covered with stone slabs, worked and set according to the drawings.

The ceiling also of the principal Entrance Tower, to be groined in stone, carefully built on centres, and fixed in the strongest and most approved manner, and to be built over with rough masonry as will be directed. <sup>Tower groining.</sup>

The vaults to be paved with sand-stone from Malone, State of New-York, or other approved quarry, in slabs 4 inches thick. <sup>Vaults paving.</sup>

The door jambs and heads of the vaults, in every case, to be of solid stone, strongly cramped and dowelled together, secured to the brickwork by iron stays, and rebated to receive the iron doors, the frames of which are to be built in as the work advances, or framed so as to be bolted through the entire thickness of the jambs, which will be determined hereafter; the steps in each case, of Malone sand-stone, or other approved quarry, to be solid, and to have the jambs built on their ends. <sup>Stone door jambs.</sup>

The quoin of the wall which will receive the iron girders supporting the small Tower, is to be built of solid blocks of sand-stone, dowelled together, set in cement, and cramped to the rough walling, in such manner as will be directed by the Architects. <sup>Quoins for girders.</sup>

Solid stone templates 1 foot 6 inches thick, 3 feet long, and the full width of the wall, to be placed to receive the ends of each iron girder throughout the buildings. <sup>Stone templates for girders.</sup>

The walls of the large tower up to the groining, to be cased with 6 inch ashlar, properly bonded and secured by iron cramps to the rough walling. <sup>Ashlar casing in tower.</sup>

All dowels used throughout the buildings, are to be of Slate 1 inch square and 2 inches long. <sup>Dowels.</sup>

#### CARPENTER.

All the timber used throughout these buildings is to be the best marketable quality, free from sap, shakes, large loose knots, or any other defect, which can be considered to impair its strength and usefulness. All timber used for joiners' work to be unexceptionable, and the whole to be thoroughly dry and well seasoned by time. Kiln dried timber will not be allowed <sup>Kind of timber.</sup>

to be used. Lintels, averaging 5 inches thick, to be used over all openings for doors or windows, for fixing joiners' work, to have 6 inch bearing in the walls, and of the full width of the wall in every case.

Clerks of works' offices.

Each of the buildings is to be enclosed by a close fence, at the contractors' expense, so that all access to the works may be prevented, excepting by permission. He is also to provide offices for the Clerk of Works, all sheds necessary for the preparation of stone work, joiners' fittings, and otherwise, and all suitable sheds for the proper protection of lumber, and the various description of artificers' work or fittings. All the timber required for internal fittings, and all the flooring board that will be required, is to be deposited on the ground within three months from the date of the signing of the contract, to ensure its being properly seasoned. (This precaution will be strictly enforced.)

Centres.

Centres to be used in the construction of all arches, securely fixed, and not struck without the consent of the Architects.

Wood bricks and bond.

Provide and fix all Wood bricks which may be directed, and necessary for securing the joiners fittings, and all bond timbers for floors and roofs.

Ground floor joists.

Those portions of the ground floors of both buildings which are not paved, and not excavated for cellar,—are to be laid with sleepers and joists of cedar, the joists being first hewed on the upper surface to receive the flooring, and having at the smallest end a diameter of 9 inches after being hewed. Fix sleepers to receive the joists, hewed on the upper and under surface, 7 inches thick, to be laid on dwarf walls at distances not exceeding 9 feet apart. The joists to be hewed at the ends and bearing on the sleepers, and placed at a distance of 2 feet from centre to centre, the bearing on the walls 1 foot at each end.

Flooring boards.

The whole area to be laid on with 2 inch grooved, and tongued, thoroughly clear flooring boards, the width in no case exceeding 6 inches, and not less than 4 inches; and the boards in each separate room or passage of an uniform width, side nailed with 3½ inch nails; all heading joints made on the middle of the joist, and carefully fixed. All the flooring

boards throughout the building, are to be laid after the skirtings are fixed, and made to fit tightly thereto.

The remaining portion of the ground floor, all the upper <sup>Upper floors.</sup> floors, and floors to the third stories, excepting record rooms and vaults, are to have joists of pine timber 12 inches by 3 inches, placed at distances 16 inches from centre to centre, every fifth joist 13 inches deep, to receive the ceiling joists, all laid with a bearing of 9 inches on the wall at each end, and the whole, including cedars of the ground floor, are to be placed lengthwise of the building in the rooms and crosswise in the passages, allowing the flooring boards to lay the longest way of the rooms or passages.

All these joists to be carefully trussed with cross struts, <sup>Cross strutting.</sup> at distances not exceeding six feet apart, and the whole surface of these floors, and wherever joists are used, is to be pugged with 2 inches of mortar, mixed with chopped hay, and laid on with a guage, pugging mortar to be provided and laid <sup>Pugging boards.</sup> by the bricklayer, the false flooring to receive the mortar, being cleft each piece not exceeding 4 inches in width and  $1\frac{1}{2}$  inch thick; an inch iron bolt with heads and screws to be <sup>Iron bolts.</sup> passed through the middle of the joists secured at the ends, and drawn up to a curve to support the floor. The whole area to be laid with flooring boards similar to that described for the ground floors.

Similar joists and flooring the various towers and in the <sup>Tower floors.</sup> large tower, forming a room between the vaulted ceiling and the reservoir above.

In every case of fire-places and flues, the joists are to be <sup>Trimming joists.</sup> trimmed, or to rest on corbels, and all trimmers to be 4 inches thick, 4 inches mitered borders to all hearths.

Fix throughout the roof in each building, tiers of joists ex- <sup>Floors in roofs</sup> tending the whole length of the several corridors, and bearing on the walls 9 inches at each end. Size of joists  $10 \times 2\frac{1}{2}$ , laid 20 inches from centre to centre. Bond timber to receive the joists in all cases  $4 \times 2\frac{1}{2}$ ; the walls built level with the top of the joists. Lay on throughout these passages, flooring board  $1\frac{1}{2}$  inch thick, grooved and tongued, and fixed as directed for the other floors.

Fix also throughout these passages, on each side, a strong <sup>Railing in roofs.</sup>



fence, supported on pillars 4 inches diameter, placed at intervals of 5 feet, upper rail rounded 4 x 2½, two intermediate rails 5 x 2.

**Tanks.**

Fix in each of the towers a reservoir for water in the position shown on the section. Those for the smaller tower to be formed of a frame of timbers 14 x 10, supported on strong stone corbels, and placed 4 feet wide from the wall all round, the open space being in the middle of the room ; a space to be left in each case for access to the rooms. The intermediate joists 12 x 3, properly framed and floored over as the other portions on the third or attic floor ; the tank itself to be formed by making a strong king post truss, of the several beams, 4 feet high and filling in the sides with studs, and a head to form the tank, 1½ iron bolt for the trusses. The inside-lining of the tank to be with two inch grooved and tongued boards ; the outer casing 1½ inch of the same description.

Every precaution must be taken, and provision made for protecting the various cisterns throughout each building from frost.

**Large tank.**

The reservoir in the large tower to be constructed with timbers 16 x 12, framed and trussed with queen posts in the strongest possible manner, resting on corbels, and having intermediate joists for the flooring, framed and bolted as before described, to be 4 feet wide and 4 feet high, clear size, braced and secured in such a manner as will hereafter be directed. Similar inside and outer casings, as described for the other tanks. Each tank to be floored over, and to have a man hole provided for access thereto.

## ROOFS.

**Roof scantling.**

The roof of each building to be constructed with framed Queen-post couples, placed at distances, not exceeding 10 feet apart, resting on templates let into the wall, having purlins, pole-plates, wall-plates, rafters, collar beams, &c., according to the sections and details at large, and of the following sizes : Tie Beams, carefully scarfed, 12 x 8 ; Couples, 12 x 6 ; Queen-posts, 12 x 8 ; Collar Beams, 12 x 8, Joists of flat, 10 x 3, placed 14 inches from centre to centre ; Struts, 8 x 8 ; Outer Joists to receive rafters, 10 x 5 ; all the joists to be se-

curely braced and strutted ;—Pole Plates, 9 x 5, Purlins; 9 x 5; Wall Plates, 9 x 4; Rafters, 5 x 2½, 14 inches from centre to centre, securely notched on and spiked to the principal timbers; Hips and Valleys, 10 x 4, secured to strongly-framed angle ties. The roofs to be covered with 1½ inch Roof boarding. sound white pine or hemlock boards, no boards wider than 9 inches laid close, and all of an even width throughout their length, and every joint broken; also to have strips to receive the slates, size 2 x 1, nailed to each rafter with 2½ inch nails. The flat to be laid with 1½ inch grooved and tongued boards, to receive the gravel covering, and laid to a current towards each side, a roll to be fixed at each side of the roof, and the felt neatly dressed over on the slating. The whole surface of the flats of the main roofs, to be covered with felt, and laid on with tar and gravel, in the most approved manner, the gravel to be carefully washed before being used, and mixed with a portion of clean sharp sand.

The rooms in the roof to be constructed as shewn on the Rooms in roof. plans, and fitted in every particular as those on the lower floors.

Ceiling joists to these rooms, 5 x 2; ceiling joists to the Ceiling joists. lower rooms throughout 3 x 2.

The couple to be secured by 1½ iron bolts at the queen-posts, Iron bolts. and iron straps 2 x ½, to the principal rafters, and the whole to be subject to the direction of the Architects during the progress of fixing.

The roofs of the various Towers to be constructed as shewn Tower roofs. by the sections, the hips let into strong angle ties. Strongly framed couples also to support the roofs on flats, directions for which and detailed drawings will hereafter be given. The minor buildings, water closets, and photograph rooms, to be covered with flat roofs, as described for the main building, laid to a current, and prepared for lead; the photograph room prepared for skylight. It is to be distinctly understood that the whole of the roofs are to be made perfect with all necessary struts, ties, trimmers, templates, fillets, tilting pieces, &c., and with all necessary bolts, and straps of iron, and also all proper gusset pieces gablets, deckings &c., having the same size rafters, pitching pieces, plates and boarding as the adjoining roofs.

**Quarter partition.** A framed and trussed quarter partition, to be placed on the upper floor, forming the water closet, &c., between the Governor General's and aid-de-camps' rooms ; size of principal timbers 6 x 4 ; studs 6 x 2, to be cased on each side with inch grooved board and filled in with saw dust, or tan bark, carefully secured from leakage.

**Doors.** All the outer doors are to be framed, according to the drawings and details at large ; and together both the frames are to be of wood, thoroughly dry and well seasoned ; doors three inches thick ; frames, rebated, 6 x 6, firmly fixed to the stone jambs, the doors to have large iron octagonal-headed nails on the outer sides, as shewn. Doors to be hung by strong wrought iron hinges, prepared to a given pattern, and secured by inside bolts and strong dead lock, with suitable inside and outside furniture bronzed. Framed, pannelled and moulded inside jamb linings to match, and architraves inside, the soffits and architraves framed to the same curve as the head of the door frames. (See drawings at large for details of these doors).

**Inside doors.** All the inside doors to be of pine, framed in six pannels, moulded and chamfered. Size of each, 8 feet high, by 3 feet 2 inches wide, and 2½ inches thick, finished. All these doors to be hung to framed, pannelled, and moulded 2 inch jambs to match, rebated on each edge, and finished with moulded architraves, according to the detailed drawing, a block to be fixed in each case in the wall to receive the screws of the hinges. Each door to be hung with three 5 inch butt hinges, and furnished with 6 inch mortise lock. The door furniture to be of the best quality, subject to the approval of the Architects, the locks to be of English manufacture, and of the prime cost value of 3 dollars. Double doors in every case leading to water closets.

**Basement doors.** Doors in the basements to be strongly framed and pannelled, 2 inches thick, size 6 feet 9 inches x 3 feet, hung to solid rebated frames by 4 inch butt hinges, and furnished with best 6 inch Carpenter's rim locks ; plain linings and soffits to all door-ways, finished with a beaded edge ; the outer doors to be furnished with a dead lock and 2 inside bolts.

**Windows.** All the windows to be framed and fitted, as shewn on the elevations, with transom rail, central pillar, and sashes 2½

inch finished thickness; sashes in every case made to slide through the soffit, which is to be framed for the purpose. Boxed frames prepared, and solid double sunk and weathered oak sills. Those windows which have mullions are to be cased inside with a framed and pannelled facing as shewn. (See detail drawings.)

Framed and pannelled, and moulded side linings, soffits, <sup>Linings.</sup> backs and elbows, in every case, and architrave to correspond with those to the doors, 7 inches wide, moulded to pattern.

Each window to be hung with Patent sash lines, brass axle <sup>Window fittings.</sup> pullies, cast iron weights, and to have the best brass sash fasteners.

Each window also to be prepared for, and fitted with a se- <sup>Winter sashes.</sup> cond or winter sash, made to correspond with the principal ones similarly hung and fixed, and having suitable fastenings for winter use—made to slide up, in the summer months.

Those portions of the various windows above transoms, or <sup>Fixed sashes.</sup> in tracery, are to be single thickness, permanently fixed.

The staircase windows and windows of the towers, are to <sup>Staircase windows.</sup> be made to hang with lines and pullies, direction for which will be given.

Suitable casements and fittings to be placed on the several <sup>Borrowed lights.</sup> positions where borrowed light is required, and shewn on the plans.

Casements 2 inches thick, with solid rebated frames 4 x 4, <sup>Basement windows.</sup> having oak sills, are to be fixed throughout, for windows of the basement, hung with butt hinges, and having suitable fastenings, plain linings of deal 1 inch thick to the jambs and soffits, and for window benches, finished with a bead on the edge similar to the doors.

Fit up dormer windows in the roof where shewn, and ac- <sup>Dormer windows.</sup> cording to detail drawings, which will be hereafter prepared. Fit up also, on the photographing room, a suitable window and frame, with all the necessary provisions for carrying on the Art of Photography.

Fit up a room in the attic of each building, with the neces- <sup>Telegraph offices.</sup> sary arrangements for a telegraph office.

Fit up the various water closet lobbies with 2 inch grooved <sup>Water closets.</sup> and tongued divisions, 2 inch 4 pannelled door, in solid re-

bated frames, fitted with 4 inch hinges, 4 inch latch, and inside bolt ; the partition to be 7 feet high, with a neat capping on the top. Each closet to be fitted with framed seat riser and cover, on suitable bearers, made to remove and fix readily, the fittings to be of oak, or other hard wood.

**Cisterns.** Provide and fix also in each lobby, a cistern for urinal, as shewn on the plan, enclosed in a pannelled and moulded frame, with doors and shelf underneath, the door fitted with hinges and small cupboard lock. The washing troughs to be enclosed in a similar manner.

**Basement closets.** The closets of the basement to have plain deal seats and risers, fixed on strong bearers, plain framed ledged doors, in rebated frames 4 x 4, fitted with latch and inside bolt.

### STAIRCASES.

**Staircases.** Each set of staircases to be fitted up as shewn on the plans, having steps and risers, balusters and rails, strings, &c., all of oak of best quality, perfectly dry and well seasoned. Steps and risers grooved together and glue-blocked, housed into 3 inch wall, and outer strings, moulded on the edge, and intersecting with the skirtings of the corridors ; steps 2 inches thick ; risers 1½ inch.

**Balusters.** The balusters to be 3 inches diameter, turned and moulded and twisted.

**Handrails.** Moulded handrail prepared in oak, size 7 x 5.

**Newels.** Newel posts of oak prepared from 8 x 8 timber, the first newel, at foot of the stairs being 10 x 10, wrought, moulded, fitted and carved, as will be shewn by future drawings.

The Newel of the principal staircase to be more elaborately finished.

**Screws.** Provide a sufficient number of hand-rail screws, and other iron supports, for completely fixing the staircases.

**Carriage pieces.** Fix also strong and suitable carriage-pieces to receive the stairs.

**Soffits of stairs.** All these staircases to be pannelled underneath with 1½ inch moulded and chamfered oak framing. The landings on each to be carefully framed ; and the boards glue jointed.

**Attic staircases.** Two sets of these staircases—one in each building—to be continued through to the attic floor.

Steps also to be fixed in the attics, leading to the various Trap doors. rooms in the towers, where required, with hand-rails, balusters, string-boards, &c., complete. Traps to be provided in the roof of each tower, and in three suitable positions on each building, for access to the flats. These traps to be secured by bolts inside.

The carpenter is to provide all labor required in laying in the various pipes for heating, fixing gratings, and otherwise, for ventilation, and in making all the preparations for laying on the gas, casing-pipes, or otherwise; he is also to furnish such labor and material as may be necessary to enable the various artificers to carry on and complete their several departments of work. Casing and Jobbing.

### PLASTERER.

The mortar for plastering of the first and second coats, to be Mortar. compounded of the best hard burnt lime, of the district, and clean sharp gravel or coarse river sand, mixed in the proportion of 3 parts of sand and 2 parts of lime, and a sufficient quantity of long cow hair. The lime to be all run through a screen, and mixed at least 3 months before it is required to be used.

The lime used for the finishing coat of plastering, is to be White finish. brought from Guelph, mixed with fine sharp clean sand.

All the laths used in plastering are to be cleft instead of Laths. sawn, sound and hearty, well seasoned, and in every respect perfect. Sappy or knotty laths will in no case be allowed in the buildings. The joints to be properly broken every 12th lath, and all large timbers are to be counter lathed, so as to form a proper key for the plastering, all nailed on with the best lath nails of the weight of 5 lbs. to the 1000.

All the walls and ceilings throughout the buildings forming Plastering. rooms, passages, halls, and otherwise, excepting only the roof, are to be respectively lathed, rendered, floated and set; the finishing coat white. The whole of the work to be executed in the best possible manner, floated perfectly true, and trowelled to a hard and smooth surface.

All angles and arrisses to be wrought true and plumb.

Angles.

**Cornices.**

Cornices with one enrichment, to be fixed to the ceilings of the principal or Governor's entrance hall and staircase, and Governor's apartments, girth 24 inches.

Cornices also with one enrichment, to be fixed to each other entrance hall and staircase, to each room used by the chiefs of departments, and the deputy chiefs.

Cornices without enrichment throughout the various corridors on both floors and the remaining offices. The average girth of these cornices 20 inches, made to such drawings as will hereafter be provided by the Architects.

**Bracketing, &c.**

The whole to be baked out by chips of brick or stone, set in plaster, or bracketed with wood, as will be considered necessary.

**Skirtings.**

The skirtings to be all formed with cement of some approved quality, a specimen of which is to be prepared and submitted to the approval of the Architects. They are to extend down to the joists, and laid on previously to laying the flooring, backed out with chips of brick or stone, projecting  $1\frac{1}{4}$  inch from the finished plastering, moulded and worked to a smooth and even surface. Average girth of skirtings 12 inches, more or less, in various rooms, as may be determined on. Those on the basement rooms to be plain, 6 inches high, with 1 inch projection.

**Cement floors.**

All the floors mentioned in cut stone Masons Specification are to be of Portland cement, done as there directed. The cement to be the best Portland cement manufactured by Messrs. B. White & Co., Milbank, London, England, and the Contractor will be required to produce and deliver to the Architects a written guarantee from the manufacturers that their best cement has been supplied. The cement is to be mixed with an equal quantity of clean sharp washed river sand, laid to the proper thickness, and finished all in one coat, the greatest care to be taken in joining the work where left off at any time, and when possible the entire surface of the floor is to be finished off by sufficient hands so as to shew no joint; where joints have to be made the work must be cut back to a strait edge as will be directed, and the fresh work connected with it by the smallest possible joint; all joints where made are to be parallel.

**Repairs.**

The whole of the plastering is to be left in a sound and per-

fect state at completion of the buildings, any repairs being made which may be rendered necessary during the progress of the various departments of work.

All external angles of chimney breasts, or otherwise, to be <sup>Keenes or Martin's ce-</sup> worked in Keenes' or Martin's cement, made perfectly straight <sup>ment.</sup> and plumb.

The several archways in the corridors, to be constructed as <sup>Archways.</sup> shewn, chamfered on the edges, all worked by trammels and made perfectly true.

All the rooms on the basements, which are not plastered <sup>Lime white.</sup> together with the water closets and offices, are to have two coats of white lime wash, the brick or stone work being first neatly pointed with mortar.

### S L A T E R .

All the roofs are to be covered with best Duchess slates, <sup>Kind of slates.</sup> partly from the Eastern Townships, and partly from Vermont laid on in the manner shown by the roofs on the elevations, partly diagonally. They are to have 3 inches bond, and nailed with  $1\frac{1}{4}$  inch strong copper nails, 2 in each slate.

Hips and valleys cut straight and true, the slates to finish <sup>Cutting.</sup> under a felt roll at the ridge, and a lead roll at the hips. Double courses at the eaves and ridges.

The slates are all to be perfectly sound, free from blemish <sup>Left perfect.</sup> of any kind, and the whole to be of an uniform color, left in a perfect manner, and without any broken slates at the completion of the buildings.

### PLUMBER AND IRON-FOUNDER.

All the plumber's work is to be done with milled lead of the <sup>Milled lead.</sup> best quality.—

The several Water-Tanks in the Towers to be <sup>Tanks.</sup> carefully lined with lead 6 lbs. to the foot, the smaller cisterns supplying the water closets, with lead 5 lbs. to the foot,—all properly fixed and soldered at the joints.

Fix to the valleys also 5 lbs. lead 20 inches wide, dressed <sup>Valleys.</sup> over a fillet on each side, and allowing 6 inches fully between the edges of the slate.

The hip rolls and ridges to be covered with lead 6 lbs. to <sup>Hips.</sup> the foot, 20 inches wide, dressed neatly on to the slates.



**Steps and  
flushings.**

Provide and fix also to all chimneys, down the sides of all towers, side walls, or otherwise, which extend above the roofs, 5 lbs. lead, stepped flushings cut in one piece, and averaging 18 inches wide, carefully secured to the stone work by wedges, and pointed with cement.

Lead flushings also to be used in all cases when necessary, and as will be directed by the Architects.

**Tower and  
flats.**

Cover the flats of the towers, water closets and photographing room, with 6 lbs. lead, laid on rolls where required, and dressed over in the most approved manner.

**Closet appa-  
ratus.**

Fit up the water closets each with a best pan closet apparatus with blue basin, sunk handle, and all the necessary cranks, and wires, &c., complete.

**Trap.**

Provide and fix to each a  $4\frac{1}{2}$  inch strap, and 3 feet in length of  $4\frac{1}{2}$  inch lead soil pipe, 6 lbs. to the foot, soldered at the joints and connections with the trap. The remaining portion of the soil pipes extending to the drains, to be 6 inch cast iron pipes, the connection between it and the lead, to be tinned and soldered. The connection between the trap and closet pan to be in the usual manner with red lead, cement, &c.

**Rising main.**

The main supply for the water tanks, to be by 2 inch middle sized lead pipe, carried immediately under the ground floor joists, and running up the towers in a chase formed in the wall, each tank to be furnished with an  $1\frac{1}{2}$  inch ball tap, to shut off the supply, and a 3 inch iron waste pipe, connected with the drain.

**Supply to clo-  
sets.**

The supply to the water closet cisterns to be by 1 inch middle sized lead pipes, also furnished with an inch ball cock, and a 2 inch iron waste pipe.

**Supply to La-  
vatories.**

A  $\frac{3}{4}$  inch supply pipe to the pans of the closets;  $\frac{3}{4}$  supply pipe also to the urinals—the flow of water through these to be constant during the day, and made to shut off at night.

A  $\frac{3}{4}$  inch supply pipe also to the washing troughs, each fitted with plated cocks, waste washer, plug and chain.

**Waste pipes.**

$1\frac{1}{2}$  inch waste pipes of lead, each trapped and fixed to the several urinals, and each washing basin. All these waste pipes to connect with the main soil pipe of the water closets; each trap to have a screw washer at the bend, for the purpose of cleaning out, if required.

The quantity of supply pipes for the water tanks, to be Iron pipes. reckoned from its entrance to each building nearest the engine ; all pipes used outside the building to be of iron, and to form a separate contract after the plan of general supply is determined.

Provide and fix in such portions of the building, as will be Hydrants. hereafter determined on, 6 brass hydrants, 3 inches in diameter, for attaching the hose to in case of fire, or for other required uses ; these to be connected with the main supply pipes, to the tanks, and six 2 inch brass stop cocks in connection therewith.

All iron work used in the buildings, is to be the best quality Quality of iron. of wrought or cast iron, properly prepared for its various uses.

Provide and fix to the floor, over the record rooms, rolled Fire-proofing. iron joists, 7 inches deep, I shape, and of the usual thickness, placed 14 inches apart, and baring 6 inches at each end on the walls ; the space between to be filled with galvanized iron wire netting, to receive the pugging between the joists, and the plastering of the ceiling below. The whole area to be pugged with mortar 4 inches thick—suitable provision to be made in these joists to receive the flooring board of the room above.

Provide and fix to each vault and record rooms, 2 framed Iron doors. iron doors, the outer one prepared on the best principle, double sheeted with wrought iron plate, securely rivetted to the frame. The inner door to be of a lighter description, sheeted only on one side, each to be hung with strong wrought hinges, and furnished with best locks.

The frames to be prepared of wrought iron, 1½ inch square, Iron door with uprights, head and cell strongly put together, and built frames. with stone work, or with iron, 3 inches x ¾ inch, both for the inner and outer frame, fixed in a rebate in the stone jambs, and bolted through their entire thickness with 1 inch bolts.

For each set of iron doors and frames, locks for the outer Cost of doors. doors, and fastening for the inner ones, the sum of two hundred dollars may be allowed as the prime cost, exclusive of fixing.

Provide and fix also to in the record room and vaults, one Iron shelves. thousand feet in length of perforated cast-iron, shelves, with divisions and standards complete.

- Iron shutters.** Provide and fix also to each record room and vaults, which have windows, one set of framed iron shutters, securely hung to iron frames built inside the walls, and having proper inside bar fastening.
- Eaves gutter.** The eaves of the roofs throughout, to be supplied with cast-iron gutters, made to the drawing at large ; the casting to be made so that the joints shall be fair outside, the stone made level to receive the gutter, which is also to be secured to the wall plates. The joints made water tight by proper iron cement.
- Down pipes.** Fix in the several positions shewn on the roof plan, twenty pipes for conveying off the rain water, 6 inches by  $4\frac{1}{2}$ , cast square, or in any other shape which may be determined on hereafter, and according to drawings to be prepared ; and to terminate near the ground with a shoe, throwing the water outwards into the surface drains. All angles of the gutters to be cast solid, at least one foot long on each side.
- Hands.** Ornamental cistern hands to each rain water pipe.
- Urinals.** Provide and fix also in each water closet lobby a cast iron enamelled urinal trough, of the size and description shewn in the plans.
- Lavatories.** Provide and fix also in the same apartment's a cast iron enamelled washing trough, with two basins in each, as referred to in the plumber's department.
- Iron girders.** Cast iron girders to be fixed to support the small tower in the west end of the left hand block, and also to support the wall over the photograph room. These girders may be estimated to contain 200 lbs. weight to every foot in length.—Detailed drawings and directions relating thereto will be provided hereafter by the Architects.
- Tarring iron.** These girders to be tarred over when hot, and painted previously to being fixed in the wall.
- Iron cresting.** The roofs to be provided with a crest work of wrought iron, made to an approved design, and fixed all round the outer edges of the flat.—care to be taken in fixing to prevent leakage through the felt covering. This work may be estimated at \$3 per foot, running measure, prime cost, exclusive of fixing.
- Iron terminals.** Provide also wrought iron work for the termination of the

various towers, as shewn on the drawings, and as will be more fully described by detail drawings, to be prepared hereafter. The sum of \$1200 dollars may be allowed as the prime cost of these various works, exclusive of fixing.

Provide also all iron straps and bolts for the roof, for the tanks, for floors, fixing the eaves gutters, for all internal fittings, staircases and otherwise, all locks, hinges and bolts, all window fastenings, stay bars, and bars for fire-places, all pipes for water supply, both hot and cold, all iron railings for staircases and gallery in tower, together with the ornamental gothic brackets, iron railing, also to the external areas and basement steps, and every other description of iron work required in the building, and in carrying out the various departments of the work, even though not specifically mentioned.

Provide and fix in the several fire-places throughout both buildings, register grates of the average prime cost value of \$24 dollars each, exclusive of fixing.

Provide also, and fix in each room valvular registers for ventilation, fixed in the most suitable situations which will be hereafter determined on. \$8 each set to be allowed as the prime cost value of these.

Fit up in the large tower a cast iron spiral staircase, with pierced treads and riser, extending from the floor over the groined arch to the floor above, to be 5 feet in diameter, and carefully fixed.

The heating and gas fittings are not included in this contract, but will be specially provided for by separate tender, hereafter.

Fix throughout all the walls, both of stone and brick, at the level immediately under the window sills, 2 rows of 5 tiers each, in stone walls, and 3 tiers in brick walls, of 1½ inch patent hoop iron bond, rivetted at all joints and cross walls, and resting on an even surface prepared for the purpose, passing through all openings of doors or otherwise, and not cut out until ordered by the Architects.

The whole to be heated and covered with tar, and sanded previously to being laid on the walls. The two tiers to be laid on the wall at an interval apart of six inches in height.

## G L A Z I E R .

- British sheet.** All the windows, except those described below, are to be fitted with best 32 oz. British sheet glass, when the square does not exceed 5 feet superficial. Above that size 42 oz. glass is to be used, laid in putty, bradded and back puttied. The outer or winter sashes to be similarly glazed with German sheet glass. The windows of the various staircases, entrance halls, and those terminating with the corridors, are to have colored glass of such design as will hereafter be given. 75 cents per foot may be taken as the prime cost value of the glass. The windows in the water closet, and other closets having borrowed light, are to be glazed with plain, obscured class, of a given design, value 50 cents per foot, prime cost.
- Colored glass.**

## P A I N T E R .

- Four coats oils.** All the wood and iron work usually painted, and not otherwise described, is to be carefully knotted, stopped and primed, and to have three additional coats of plain oil painting, of such color as will be determined on hereafter. All external iron work also to be painted in 4 coats of oil, plain colors.
- Picked colors.** The iron crests on the roofs to be picked out in various colors, as will be directed.
- Staining.** All window frames and sashes to be painted externally in plain colors. All internal doors and windows of the ground and first floor, and attics, with their fittings, to be stained with 2 coats of Asphaltum, of an approved patent, and twice varnished. All the oak fittings whether doors, linings or otherwise, handrails, newels, steps and balusters of the staircases, are to have two coats of best copal varnish.
- Paint on cement.** Cement skirtings to be painted 3 coats in plain oil colors, grained to match the fittings of the rooms, and once varnished.

## SPECIFICATION

Of additional works to be done in making Fire-proof the two Departmental Buildings at Ottawa, C. W., according to the accompanying Drawing and Memorandum, attached.

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Omit the timber joists as originally specified, and substitute Rolled iron joists. in lieu thereof, for the ground and first floors of each building and the 3 attic rooms of right hand block, rolled iron joists on Fox & Barrett's Patent; they are to be placed 20 inches from centre to centre, throughout both floors of each building, and to bear 9 inches at each end on the walls, resting on a course of proper stone templates throughout. The size of joists to be regulated according to the length of bearing by the memorandum attached to the drawing, and are to be thoroughly coated with paint, or tar, previously to their leaving the mill.

Lay throughout the floors fillets of deal about  $1\frac{1}{2}$  inch square, resting on the flanges of the iron joists, placed nearly closed together to receive the pugging, these strips to be cleft on the upper surface and edges and sawn only on the under side.

Provide also and fix underneath said strips, ceiling joists of pine  $2 \times 1\frac{1}{2}$  inch to receive the laths of the ceiling, placed 12 inches from centre to centre.

Provide also, and lay in the concrete fillets of pine 2 $\frac{1}{2}$  inches square and 16 inches apart, to receive the flooring boards; these fillets to be secured by struts or otherwise, as will be required and directed by the Architects.

The flooring of the several rooms and corridors to be completed according to the original specification.

The ceilings also to be as originally specified, with cornices, &c., complete.

The whole area of the floors to be laid with concrete 9 inches thick, composed of best hard burnt lime and gravel or cracked stones, in the proportion of one part lime, five parts coarse gravel, or broken stones and bricks, and one part fine

gravel, and clean sharp sand, the whole thoroughly incorporated together, mixed with water to the proper consistency, and placed on the fillets to a regular gauge, in two layers of about  $4\frac{1}{2}$  inches each, the first layer being allowed to harden previously to laying on the second, and each to be carefully trodden or rammed together.

The coarse gravel or broken stones, to be passed through a screen of one inch gauge, and the finer gravel through a screen of half an inch gauge, and no stones to be of a larger size.

**Lime.** The lime to be of the very best quality, fresh burnt for use from time to time, as required.

The gravel carefully prepared, free from pebbles and deleterious matter of any kind, and mixed with a portion of clean sharp sand, as will be directed.

**Large iron joists.**

Iron joists, of larger size, prepared to a given pattern, are to be placed as girders to the staircases, and in any other situation where they may be required, to receive the ends of intermediate joists, and also for trimmers to fire-places.

**Easings.**

Provide and fix all necessary easings and mouldings to said trimmers, as previously specified.

**Staircases.**

Each staircase to be constructed with solid Ohio or other approved stone, spandrel steps of the sizes before specified for the oak stairs. They are to be built into the walls, one foot at the ends, and each step joggle pointed.

**Landings.**

Landings, in every case, 6 inches thick, in one stone, the whole to be carefully cleaned off to an even surface on the under side, having raking soffit, and left complete in every respect.

**Handrails and newels.**

The Contractor in preparing his estimate for the foregoing works, will omit the staircases, as specified, excepting only the hand rails and newels, which will remain as before.

**Balusters.**

The balusters throughout are to be of wrought iron, of such design as will hereafter be determined on, yolted to the stone, and secured in the best manner to the hand rail, the sum of five dollars may be estimated as the prime cost per yard of the balustrade throughout, exclusive of fixing.

The basement staircases to be also of stone, with plain iron bar balusters, and flat round iron hand rail, yolted to the stone steps, and fixed in the best manner.

This specification is to be incorporated with, and to form a **Conditions.** part of the original specification for the whole buildings, subject in every respect to all its clauses and conditions, precisely as though it had been originally included therewith.

Witness to the signatures of Edward  
Haycock and Thomas C. Clarke.

(Signed,) J. J. BURROWES,

Witness to the signatures of Ralph  
Jones and John Rose.

(Signed,) H. BERNARD.

(Signed,) { RALPH JONES,  
EDWARD HAYCOCK,  
THOMAS C. CLARKE,  
JOHN ROSE,  
Commissioner.

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## SCHEDULE

Of fixed Rates and Prices for Labor and Material, supplied on the ground, and required in the erection of the New Departmental Buildings, City of Ottawa, forming the basis of the accompanying Estimate and Tender. The scale of Rates here following to be allowed in valuing work for progress estimates, as well for alterations, additions or works dispensed with, together with Extras, to be measured and calculated solely by the Architects, or Clerk of the Works in charge, from time to time.

**To Wit:**

	\$ Cts.
In earth, clay, or gravel, per cubic yard.....	0 21
In rock,                      do    do .....	0 52
 Fire clay pipes with cemented joints,	
4 inch, 14 cts., 6 inch, 23 cts., 9 inch, 35 cts., 12 inch, 42 cts., 15 inch, 52 cts., diameter per foot run.	
4 inch, 13 cts., 6 inch, 22 cts., 9 inch, 34 cts., 12 inch, 41 cts., 15 inch, 51 cts., laid dry, per foot run.	
Brick barrel drain in mortar, 12 and 18 inch diameter, per foot run.....	0 45
Amprior marble, unwrought, delivered, per cubic foot.....	1 05
Ottawa lime stone,    do        do        do        do .....	0 21
Ohio sandstone,        do        do        do        do .....	0 45
Caen Freestone,        do        do        do        do .....	0 70
English firebrick, unlaid,        do    per 1000.....	35 00
Ohio or Malone stone pavement flagging, per foot super.....	0 25
Vermont and Eastern Townships slating laid with copper nails in the best manner, per square .....	6 65
Minton's Eucaustic tiles, in plain colors, laid in the best manner, per foot super.....	0 77
Marble paving, white and black checkers, in the best manner, per foot, super .....	0 60
Rubble stone masonry, in lime mortar, in foundations, per cubic yard....	1 58
Do        do        in Cement,        do        per cubic yard.....	2 19
Rubble stone masonry, in mortar, above ground level, per cubic yard....	1 75
Random coursed work    do        do        do    per cubic yard.....	2 53
Coursed masonry, hammer dressed, per cubic yard.....	3 64
6 inch ashler, per foot super.....	0 30

	\$ Cts.
Rough bouchard face, per foot superficial, stone included.....	0 35
Fine bouchard face, do do do do .....	0 38
Chiseled or tooled face, per foot super., plain surfaces, stone included....	0 42
Rubbed do do do do do .....	0 44
Do for moulded work do do do .....	0 53
Concrete laid, per cubic yard.....	2 45
Interior walls for plastering, laid in mortar, per M 20 bricks, reckoned to the foot, per 1000.....	6 30
Exterior walls, chimnies, &c., laid in mortar, per 1000.....	7 00
Brick work, in arches, laid in mortar, do .....	6 65
Brick paving on edge, laid in mortar or sand, do .....	8 75
Brick niggling laid in mortar, per 20 bricks to the foot.....	7 00
White or red pine, rough or unframed, for beams, plates, girders, breast-umers, &c., per cubic foot.....	0 15
Cedars, 12 in diameter, per foot, lineal.....	0 12
Pine floor Joisting, B. M., per M.....	0 16
Studding or quartering, B. M., per M.....	0 17
Rafters, purlins, &c., B. M., do .....	0 19
Bond timbers, wall plates, &c., B. M., per M.....	0 16
Trussed partitions, per square.....	4 90
Herringbone strutting, per hundred feet run.....	7 00
Pugging, per square, 3 inch thick, sound board included.....	1 75
Battering walls, &c., per square.....	1 40
Centreing, per square foot.....	0 07
Bracketing for cornices and projections, per foot, super.....	0 10

					THICKNESS.		
					2	1½	1
					\$ cts.	\$ cts.	\$ cts.
First quality pine battens, laid per square.....					5 90	3 85	3 15
Do do oak do do .....					7 70	5 25	4 20
Second do pine do do .....					4 55	3 50	2 80
Do do oak do do .....					6 65	4 55	3 85

		THICKNESS.	
		1½	1¼
		\$ cts.	\$ cts.
Pine roofing boards, grooved and tongued, laid per square...		2 45	2 10

# SCHEDULE OF PRICES.

129

	\$ Cts.
Clear seasoned lumber, best quality, B. M., per M.....	13 30
Common inch boards, B. M., per M.....	8 40
Oak in scantling, planks or boards, unfixed, per M. B. M.....	25 20
Casings to beams, jamblings, &c., dressed and fixed, per lineal foot.....	0 35
Staff and angle beads, fixed.....	0 05
9 inch single faced moulded skirtings fixed, per foot run.....	0 14
12 inch double faced do do do .....	0 21
16 inch do do do do .....	0 28
16 Do in Keenes or Martin's cement.....	0 18
2 inch four pannelled moulded framed doors, of pine 30 cts., and oak 35 cts. per foot super.	
2 inch six pannelled moulded framed doors, of pine 35 cts. and oak 40 cts., per foot super.	
Six inch single faced moulded door and window architraves, per foot lineal.....	
	0 08
Eight inch double faced moulded door and window architraves, per foot lineal.....	
	0 17
Ovolo rising sashes, double hinge, with all requisite frames, weights, pullies and fastenings, per foot super.....	
	0 35
Ovolo french casements, hinged and fixed, per foot super.....	
	0 25
Lath, plaster, float and set, per yard super.....	
	0 21
Render, float and set do do .....	
	0 18
Guaged work in ceilings, coves, &c., per yard super.....	
	0 24
Plaster cornices, per foot girth.....	
	0 14
Centre flowers fixed, per foot diameter.....	
	2 80
Lime White basement walls, per yard.....	
	0 03
Milled Lead Laid, per cwt.....	
	7 00
Zinc Covering, per pound.....	
	0 14
I. C. Tin Roof Covering, per square.....	
	10 50
Best Charcoal IX Covering, per square.....	
	12 00
Galvanized Iron Gutter, per pound.....	
	0 17
Ornamental Iron Work, per pound.....	
	0 17
Cast Iron Girders, per pound.....	
	0 03
Wrought Iron Straps, Bolts, &c., per pound.....	
	0 12
Cast Iron, per cwt.....	
	3 10
Cast Iron Gutters and Pipes, per cwt.....	
	3 50
Felt, Tar and Gravel on roofs, per square.....	
	4 20
In white lead, oil, knotting, stopping and priming.....	
	0 05

		\$	Cts.
Two coat work, per square yard.....		0	04
Three do do .....		0	07
Four do do .....		0	09
Add for graining, and twice varnishing, per square yard.....		0	28
Distemper or ceiling and walls, do do .....		0	07
Staining in Patent Asphaltum Stain, do do .....		0	09
Smethwick English Sheet, per foot super.....		0	35
Best English Crown, do .....		0	45
Seconds do do .....		0	38
Best German Sheet.....		0	14
Ornamental or colored glass, 10 per cent allowed over cost.....		0	00
Gothic lozenge glazing, in metal frames, per foot super.....		0	21
Carpenter's wages, per day.....		1	25
Joiner's do do .....		1	25
Bricklayer's do do .....		1	50
Stone Mason's do do .....		1	25
Stone Cutter's do do .....		1	60
Plasterer's do do .....		1	50
Labourer's do do .....		1	00
Slater's do do .....		1	50
Stone Carver's do do .....		2	50
Wood Carver's do do .....		2	50
Painter's and Glazier's do do .....		1	25
Plumber's do do .....		2	00
Tinner's do do .....		1	50
Blacksmith's do do .....		1	25

All works not enumerated to be valued by the Architects, at fair current rates.

STENT & LAVER, Architects.

Ottawa, October, 1859.

Witness to the signatures of Ralph Jones  
and John Rose.

(Signed,) H. BERNARD.

Witness to the signatures of Edward Haycock  
and Thomas C. Clarke.

(Signed,) J. J. BURROWES.

(Signed,) { RALPH JONES,  
EDWARD HAYCOCK,  
THOS. C. CLARKE,  
JOHN ROSE,  
Commissioner

**No. 27.****20053.**

DEPARTMENT OF PUBLIC WORKS,

Quebec, 10th December, 1859.

GENTLEMEN,

I am directed by the Honorable the Commissioner to notify you that a contract has been entered into with Messrs. Jones, Haycock & Co., of Port Hope, for the erection of the Departmental Buildings at Ottawa, a copy of which will be transmitted for your information and guidance in the course of a few days, and I am to inform you that they are to commence work forthwith, and are to proceed immediately to Ottawa to make the necessary arrangements for that purpose. The Commissioner desires therefore that you will begin at once to lay out the work, establish the levels, and prepare for getting out the foundations, to open quarries and deliver materials during this winter, in order that the building may be commenced early next spring—you will furnish the contractors with all requisite working drawings and instructions for their guidance, so that no time may be lost in making a commencement.

You are requested to make monthly Reports to the Commissioner, of Progress of the work. To measure up on the last day of each month all the work done and materials delivered on the ground by the Contractors, and furnish an estimate of its value in proportion to the contract price, which estimate is to be countersigned by the Clerk of Works and transmitted to this Office for approval on or before the fifth day of each month.

You are to keep an order book according to the form approved of by the Commissioner, in which shall be recorded all orders that may be given to the contractors for such changes, alterations or extra work, as may arise or become necessary during the progress of the work, and all such orders must be sent to the Commissioner for approval, before they are issued to the Contractors.

Mr. John Morris has been appointed Clerk of works, both for the Parliamentary and Departmental Buildings, as it is considered that he will be able to attend to both during the winter, and until the building is commenced next spring, and has been instructed to place himself under your orders in that capacity, in carrying out the plans of the Departmental Buildings.

In carrying out these plans, and furnishing detailed drawings you are further instructed to make the following modifications and alterations, in conformity with the terms of the contract.

1st. To alter the arrangement of the right hand or Eastern Block, as shewn on the plans submitted for tender, so that instead of the longer front and the Governor General's entrance being on Wellington Street, they shall be on the square, and the shorter face to front on Wellington Street.

2nd. To alter the position of the small tower of the right hand block, and place it at the eastern end of the Wellington Street front.

3rd. The small octagonal turret at the North West angle of the south wing of the left hand block, to be projected forward, in order to leave the room clear of walls, girders, &c., &c.

4th. Do away with the projection of the Photograph room, and provide a room for that purpose in the high part of the roof of the left hand block.

5th. Leave openings into any of the enclosures in the basement of both blocks, when the foundation walls are of sufficient height to render these enclosures available as rooms for future use.

I am &c.,

(Signed,) J. G. VANSITTART,  
for Commissioner.

Messrs. Stent and Laver,  
Architects, Ottawa City.

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**No. 28.**

**30073.**

DEPARTMENT OF PUBLIC WORKS,  
Quebec, 12th December, 1859

GENTLEMEN,

In reference to your letter of the 19th November last, on the subject of remuneration for your professional services in erecting the Parliamentary Buildings in Ottawa, I am directed by the Honorable the Commissioner to inform you, that by an order in Council of the 2nd December, your remuneration is to be five per centum on the outlay, provided that the gross amount of commission do not exceed eight thousand two hundred and fifty pounds, and this sum be divided in proportion to the cost of the respective buildings. That this percentage shall include all charges of every description in connection with your professional services, and that under no circumstances whatever, whether of deviation or

addition to the plans, or delay in their progress, shall a greater sum be claimed by you, and that it shall be paid according to the progress of the work, at the sole option and direction of the Commissioner.

I am, &c.,

(Signed,) J. G. VANSITTART,  
for the Commioner.

Messrs. Fuller & Jones,  
Architects, Ottawa.

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**No. 29.**

30074.

DEPARTMENT OF PUBLIC WORKS,  
Quebec, 12th December 1859.

GENTLEMEN,

In reference to your letter of the 19th November last, on the subject of remuneration for your professional services in erecting the Departmental Buildings in Ottawa, I am directed by the Honorable the Commissioner to inform you that, by an order in Council of the 2nd December, your remuneration is to be five per centum on the outlay, provided that the gross amount of Commission do not exceed eight thousand two hundred and fifty pounds, and this sum be divided in proportion to the cost of the respective buildings. That this percentage shall include all charges of every description, in connection with your professional services, and that under no circumstances whatever, whether of deviation or addition to the plans, or delay in their progress, shall a greater sum be claimed by you, and that it shall be paid according to the progress of the work, at the sole option and direction of the Commissioner.

I am, &c.,

(Signed,) J. G. VANSITTART,  
for the Commissioner.

Messrs. Stent & Laver,  
Architects, Ottawa.

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**No. 30.**30077.DEPARTMENT OF PUBLIC WORKS,  
Quebec, 12th December, 1859.

GENTLEMEN,

I am directed by the Honorable the Commissioner, to notify you that a contract has been entered into with Mr. Thomas McGreevy of Quebec, for the erection of the Parliamentary Buildings at Ottawa, a copy of which will be transmitted for your information and guidance, in the course of a few days, and I am to inform you that he is to commence work forthwith, and is to proceed immediately to Ottawa to make the necessary arrangements for that purpose. The Commissioner desires therefore that you will begin at once to lay out the work, establish the levels, and prepare for getting out the foundations, to open quarries and deliver materials during this winter, in order that the building may be commenced early next spring. You will furnish the contractor with all requisite working drawings and instructions for his guidance, so that no time may be lost in making a commencement.

You are requested to make monthly reports to the Commissioner, of progress of the work. To measure up on the last day of each month, all the work done and materials delivered on the ground by the Contractor, and furnish an estimate of its value, in proportion to the contract price, which estimate is to be countersigned by the Clerk of Works, and transmitted to this Office for approval on or before the fifth day of each month.

You are to keep an order-book, according to the form approved by the Commissioner, in which shall be recorded all orders that may be given to the Contractor for such changes, alterations, or extra work as may arise or become necessary during the progress of the work, and all such orders must be sent to the Commissioner for approval, before they are issued to Contractor.

Mr. John Morris has been appointed Clerk of Works, both for the Parliamentary and Departmental Buildings, as it is considered that he will be able to attend to both during the winter, and until the building is commenced next spring, and has been instructed to place himself under your orders in that capacity in carrying out the plans of the Parliamentary Buildings.

In carrying out these plans, and furnishing detailed drawings, you are further instructed to make the following modifications and alterations, in conformity with the terms of the contract.

1st. To leave openings for doors in the basement walls of the rooms, in the front part of the building, so as to give access and fit them for future use, should they be required, giving them light also from without and fire-places within.

2nd. Convert portions of the basement into fuel-vaults, and make the through passage large enough to take a truck or cart through.

3rd. Open passages through walls of the parts of the plan marked « *no basement* », as means of access in laying gas and water pipes.

4th. Remove the water-closets and urinals from side of principal entrance lobby to the adjoining rooms, and loop holes in solid walls to light them.

I am &c.,

(Signed,) J. G. VANSITTART,  
for the Commissioner.

Messrs. Fuller & Jones,  
Architects, Ottawa.

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No. 31.

DEPARTMENT OF PUBLIC WORKS,  
Quebec, December 24th, 1859.

TENDERS FOR HEATING, AND VENTILATING PUBLIC  
BUILDINGS, OTTAWA.

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POSTPONEMENT OF TIME.

The period of receiving *tenders* for the above work, has been postponed until *Monday*, the *sixteenth* day of *January* next, at *noon*.

By order of the Commissioner,

T. TRUDEAU,  
Secretary.

**No. 32.**

Montreal, 14th January, 1860.

44905.

To the Secretary of Public Works,  
Quebec, C. E.

I do hereby offer to supply all the materials, construct, erect and put in successful operation all the works and machinery necessary for heating and ventilating the Parliamentary and Departmental Buildings at Ottawa (with the exception of excavation, masons', bricklayers' and joiners' work, as I notice by the builders' specifications that such work is included in their contract), and herewith submit for consideration, four systems for warming the Buildings, any one of which I am willing to guarantee.

First.—Warming by steam, on the vault system, for the sum of sixty-one thousand, two hundred and eighty-five dollars (\$61,285.00.)

Second.—Warming by hot water, on the vault system, for the sum of seventy-five thousand, six hundred and eighty-five dollars (\$75,685.00.)

Third.—Warming by steam, on the coil system, for the sum of sixty-six thousand, three hundred and forty-two dollars (\$66,342.00.)

Fourth.—Warming by steam-pipes, placed in grooves, sunk in floors and covered with iron gratings, for the sum of fifty-seven thousand, one hundred and thirty-one dollars (\$57,131.00.)

I send herewith plans and descriptions of the vault system, together with the descriptions of the two other systems made as explicit as possible. Should you, however, require further information on any of the proposed systems, I will be happy to give you any further details &c., that may be required. I enclose herewith letter signed by Messrs. William Parkyn, John Ostell, and Alex. Levy, all of this city, who are willing to become my securities.

I have the honor to remain,

Your obedient Servant,

CHARLES GARTH.

DEPARTMENT OF PUBLIC WORKS,

This tender was received at 10.50 A. M.

January 16th, 1860.

SAMUEL KEEFER, Depty. Comr.

T. TRUDEAU, Secretary.

44959.

N<sup>o</sup>. 1.—Vault system.

Parliamentary Block. . . . .	\$37,329.00
Departmental Building—Right Block . . . . .	12,145.00
“ “ Left “ . . . . .	11,811.00
	<u>\$61,285.00</u>

N<sup>o</sup>. 2.—Vault system, Hot Water.

Parliamentary Block. . . . .	\$46,150.00
Departmental Building—Right Block . . . . .	14,957.00
“ “ Left “ . . . . .	14,578.00
	<u>\$75,685.00</u>

N<sup>o</sup>. 3.—Coil system, Steam.

Parliamentary Block. . . . .	\$38,924.00
Departmental Right Block . . . . .	13,976.00
“ Left “ . . . . .	13,442.00
	<u>\$66,342.00</u>

N<sup>o</sup>. 4.—Tubes in floors, Steam.

Parliamentary Block. . . . .	\$33,851.00
Departmental Right Block . . . . .	11,779.00
“ Left “ . . . . .	11,501.00
	<u>\$57,131.00</u>

CHS. GARTH.

January 24, 1860.

Montreal, 14th January 1860.

To the Secretary of Public Works,  
Quebec, C. E.

We the undersigned are willing to become security for the due performance of any contract, or contracts, that Charles Garth may enter into with the Commissioner of Public Works, for the heating of Public Buildings at Ottawa, and also for the continued efficiency of the system for ten years.

Securities. { WILLIAM PARKYN,  
                  { JOHN OSTELL,  
                  { ALEX. LEVY.

**No. 33.****45091.****PUBLIC WORKS DEPARTMENT,****Quebec, 23rd January 1860.**

To the Honorable

The Commissioner of Public Works,

SIR,

In compliance with the instructions furnished me, I have carefully examined the proposals for heating and ventilating the New Houses of Parliament at Ottawa, and beg to submit my opinion on the applicability of each system.

The proposals are five in number as follows :

	Parliament Buildings.	Depart- mental Buildings.	Both.
N <sup>o</sup> . 1. Mr. Mills, Hot-air Furnace. . . . .	\$10,000	\$12,800	\$22,800
" 2. Messrs. de Staeklin & Co., Steam-pipes. . . . .	52,000	42,920	94,920
" 3. Mr. Mitchell Gold's system. . . . .	47,495	41,901	89,396
" 4. Mr. Garth sends four proposals :—			
1st. Warming on Steam-Vault system . . . . .			61,285
2nd. Hot-Water Vault system. . . . .			75,685
3rd. Steam, or Coil system. . . . .			66,342
4th. Steam-pipes in Floors. . . . .			57,131
" 5. Messrs. Barclay & Gilbert, Steam. . . . .	35,500	30,000	65,500

N<sup>o</sup>. 1.—THE PROPOSAL OF MR. MILLS to warm the Buildings with his improved patent hot-air furnaces, is not accompanied by any specification or plan of the mode of distributing the furnaces, or any remarks upon the system of ventilation, and therefore I am not able to offer any further remarks thereon, except that I do not consider it practicable to warm a building of this magnitude with hot-air furnaces; because, in order to obtain anything like an equal distribution of heat in the several offices &c., it would be necessary to have an immense number of furnaces fixed in the basement, and as these would necessarily be placed some distance apart, the working expenses would be very great, as many additional hands would have to be employed.

**MESSRS. DE STAELIN, ANDREWS, & BAILLARGÉ, N° 2.**—The proposal of Messrs. de Staeklin & Co., to warm the buildings by steam-pipes, laid in the floors of the several rooms, and heated by steam generated by boilers placed in the central courts, three in number, of fifty-eight horse power, each calculated to work at a pressure of 75lbs. The fresh air is introduced direct from the external air to the steam-pipes, by small ducts with regulators, &c.

I believe that this system would answer extremely well in a climate less severe than this, but when the thermometer is 20° below zero, I consider that it would not be advisable to introduce a current of air direct from the external atmosphere upon the steam-pipes, which are placed within five or six feet of the outside face of external wall. Whilst the steam is at full pressure, this method might answer; but should the steam be low, I fear such a stream of air, at so low a temperature, would cause condensation in the pipes, which would be frozen; the pipes consequently stopped, most probably burst, and considerable damage and inconvenience ensue. I do not consider that there is sufficient preparation, by the arrangements proposed, for preventing the noise caused by expansion and contraction, or the rushing of the steam through the pipes:—means of carrying off the condensed steam do not seem to have been sufficiently considered.

The only mode of regulating the heat in the various offices, is by partially or totally closing the valves in the air ducts. There is no provision for shutting off the steam from any particular office, and, as the pipes pass through every office, a certain amount of heat would radiate, notwithstanding that the valves of the air-ducts were closed. I cannot approve the method proposed of laying the pipes, viz: by a trench formed in the concrete floor, as I consider the strength and efficiency of the floor would thereby be affected; and in this system of fire-proofing the chief reliance is placed upon the solid bed of concrete. The system of ventilation generally proposed would, I believe, be efficient, with some slight alteration in the minor details.

I would here remark that these plans, specifications, and calculations have been prepared in a most scientific and careful manner. Messrs. de Staeklin & Co., must have bestowed much time and labor upon them.

**MR. MITCHELL, N° 3.**—The proposal of Mr. Mitchell to warm the buildings by means of « Gold's Patent Steam apparatus Boilers », calculated to work at a pressure of 1½lbs. on the square inch. This apparatus I believe to be well adapted for private dwellings, but inadequate to a

building of this magnitude, and is subject to the objections urged against the apparatus of Mr. Mills, viz : that a great number are required, causing great trouble and expense in the supervision.

MR. GARTH, N<sup>o</sup>. 4.—Mr. Garth submits four proposals : N<sup>o</sup>. 1.—To warm and ventilate the Buildings by steam, on the vault system, with six boilers of 15 horse power, each calculated to work at 10lbs. per inch, and prove to 20 lbs. I consider this system of heating and ventilating, would be more likely to meet the requirements than any of the others proposed, if the boilers were capable of being worked at a much higher pressure than that provided by the specification ; (and, in an interview I had with Mr. Garth, I found that he quite coincides in this opinion ; but I cannot agree with Mr. Garth in considering the fan useless, as I understand, though I cannot speak from personal observation, that fans have been found absolutely necessary in the Public Buildings in Washington) ; but the adoption of this system for the whole of the buildings, would cause considerable sacrifice of room in the basement of the two wings.

N<sup>o</sup>. 2.—To warm by hot water, on the vault system. I consider this inferior to the former ; it is more liable to get out of order, there is greater danger from the freezing of the pipes, it would require more vigilant supervision, and it is more costly.

N<sup>o</sup>. 3.—To warm by steam, on the coil system, and boilers as before. I believe that this system would answer the purpose as regards heating (boilers used at a higher pressure) ; but there would be danger, even with the greatest care, of noise from the contraction and expansion in coils and other pipes, and also in the passage of the steam, and it is also more costly than the vault system.

N<sup>o</sup>. 4.—To warm by steam-pipes placed in the floor, boilers as before. This system, as proposed by Mr. Garth, I believe to be totally inefficient, and it is subject to the objections urged against Messrs. de Stacklin & Co's., plan of laying the pipes in a trench or channel formed in the concrete.

MESSRS. GILBERT & BARCLAY, N<sup>o</sup>. 5.—The proposal of Messrs. Gilbert & Barclay for warming the Buildings by steam, with two boilers worked at a pressure of 4 lbs. to an inch, and ventilating upon the « Plenum » system.

I consider the method of laying the pipes in the Legislative Halls extremely objectionable—the « attemptators » are placed immediately under the feet of each member. The system proposed generally seems to be similar in its effects to that of warming by steam in radiators and the

vault system. The suggestion of introducing *Statuesque radiators*, (and I believe that it would not be practicable to use them as radiators, for they would have to be made of cast iron, or bronze), I cannot but condemn most strongly, as being contrary to all true principles of architectural decoration.

The system of ventilation termed *plenum*, I do not believe could be enforced in practice. At all events it would be an experiment, involving so great an outlay in the event of failure, that I should not feel justified in recommending the trial. I do not remember any building in which this system of ventilation has been adopted.

I have thus briefly given my opinion on the various proposals, and beg to state that, after a careful study of the whole subject, I believe that the proposal of Mr. Garth, to warm and ventilate by steam on the vault system, would be the most efficient of those submitted (provided a higher pressure be used) ; and the estimate for this system is the lowest of any that I consider at all applicable.

But the cost attendant upon the construction of the vault, continued to every portion of the Building, would be great, and cause the sacrifice of some rooms in the basement. I therefore beg to recommend a modification of the vault and coil system—that is, I recommend the vault system for the whole of the central portion of the Buildings and the Library, and the coil system for the wings.

I consider it necessary that every precaution should be taken for carrying off the condensation from the pipes, and thus prevent noise in the passage of the steam, and also due provision made to allow for expansion and contraction.

The coils should be covered with open ornamental iron-work, formed into panels ; any imitation of chimney-pieces I would strongly condemn.

With respect to the size of the steam-pipes, their number, the capacities and power of boilers, pumps &c., the Contractor being required by the stipulations to guarantee their efficiency for ten years, it does not come within my province to interfere as regards them ; but I consider it of the greatest importance that the Contractor should further be required to guarantee that the action of all these shall be noiseless.

I would remark that although the plans and specifications, prepared by Mr. Garth, are sufficiently explanatory for the purpose of shewing the principle upon which he proposes the work to be accomplished, I consider that before the Contract is signed, detailed specifications of the work should be provided for your approval.



In conclusion, the contractor for the Building is desirous of having the working plans properly figured, but until the plans for the warming and ventilating are matured, it is impossible to prepare them, and unless he is furnished them shortly, the work will be delayed.

I beg respectfully to submit the foregoing Report for your consideration,

And have the honor to be,

Sir,

Your obedient Servant,

THOS. FULLER,

*Pro* FULLER & JONES,

Architects for the Parliament Buildings.

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No. 34.

43090.

DEPARTMENT OF PUBLIC WORKS,

Quebec, January 23rd 1860.

SIR,

I have the honor to report that, in conjunction with Mr. Fuller, I have carefully examined and considered the plans, specifications and tenders which have been received at this office, up to noon of the 16th. instant, for heating and ventilating the Parliamentary and Departmental Buildings at Ottawa.

The subject of heating and ventilating is not unattended with difficulties. There are several systems for accomplishing the same object, and up to this time no one of these seems to have become recognized by common consent as the best ; again, there are some plans which give satisfactory results on a small scale, but would be totally inapplicable to the cases under consideration.

In the plans which have been submitted, much science and practical knowledge have been brought to bear, shewing an extended acquaintance with the subject, and a degree of mechanical ability highly creditable to the parties. I feel satisfied that it is possible, from amongst these plans, to make choice of one, which, with some modifications will meet the requirements, and produce the best results.

Mr. Fuller, in his report on these tenders, has carefully reviewed the several systems on which they are based, and offered some practical suggestions. With his views I entirely concur, except that I would prefer having the ventilation effected without the use of a fan ; and think it possible to do so. This, however, is a question which does not affect the decision upon the tenders, and may be settled hereafter.

I quite agree with him that the system of heating by steam, with fresh air introduced through vaults under the building, the air warmed by steam-pipes in its passage into the apartments, and then distributed, and the vitiated air drawn off by a proper system of ventilation, is the one which is most efficient, agreeable and healthy.

The tender which combines the most advantages, and comes nearest the requirements, is the first one submitted by Mr. Charles Garth of Montreal, on the steam and air vault system, being \$61,285.00 for both Parliamentary and Departmental Buildings, and the lowest tender of any system which it would be safe to entertain.

But if this plan were carried out in all its details, in all parts of the Parliamentary Buildings, the vaults would interfere with some of the rooms in the basement of the wings. A modification of this plan would therefore be necessary. Steam radiators may be applied in the wings, and the vault system to the two houses, the Library, the corridors and the central part of the Building, where, from the number of persons frequenting these parts, a larger supply of fresh air will be indispensable. Such a modification as this, or the combination of the two systems, can be accomplished, it is supposed, without any increase of expense beyond the amount of this tender, and it is confidently believed it will meet all the requirements.

The same reasons which influence the choice of a system for the Parliamentary Buildings, hold good in selecting one for the Departmental : but in the latter case, it is believed that the steam and vault system requires no modification, and may be perfectly carried out in all its details. The tender of Mr. Garth includes both.

Mr. Garth is well known as a practical mechanic in this Department, having had many years' experience in heating and ventilating, and has been successful, as shewn by his certificates, in heating some of the largest institutions in the Province. His security is unexceptionable, and I therefore recommend his tender to your favorable consideration.

An early decision is required, in order to have the foundation plans prepared, in conformity with the system adopted, and the excavation, which is now in progress, directed accordingly.

I have the honor to be, Sir,

Your obedient Servant,

SAMUEL KEEFER, Dy. Com. P. W.

The Honble. John Rose,

Commissioner, Public Works.

**No. 35.**305824.

DEPARTMENT OF PUBLIC WORKS,

26th January, 1860.

To His Excellency SIR EDMUND W. HEAD, Governor General, &amp;c., &amp;c.

The undersigned has the honor to submit herewith a Schedule of the tenders for heating and ventilating the Parliamentary and Departmental Buildings at Ottawa, together with the Reports of the Architect and Deputy Commissioner thereon.

He concurs in the opinion expressed by them, and recommends that the tender N°. 4, of Mr. Garth, for heating by steam on the vault system, for the sum of \$61,285 be accepted, and that the Commissioner be authorized to require such modifications as are suggested by the Architect and Commissioner during the progress of the works.

Respectfully submitted,

JOHN ROSE,

Commissioner.

**No. 36.** Copy of a Report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council, on the 28th January, 1860.

45092.

On a report, dated 26th January, 1860, from the Hon. the Commissioner of Public Works, submitting a Schedule of tenders for heating and ventilating the Parliamentary and Departmental Buildings at Ottawa, together with the reports of the Architect and Deputy Commissioner thereon, and stating that he concurs in the opinion expressed by them, and recommends that the tender N°. 4, of Mr. Garth, for heating by steam on the vault system, for the sum of \$61,285. be accepted; and that he, the Commissioner, be authorized to require such modifications as are suggested by the Architect and Deputy Commissioner during the progress of the work.

The Committee recommend that the tender of Mr. Garth be accepted, as suggested by the Commissioner of Public Works.

Certified,

W. H. LEE,

C. E. C.

To the Honorable the Commissioner  
of Public Works, &c., &c., &c.

**No. 37.** Memorandum on which to base specification for the Departmental Buildings.

45132.

RIGHT HAND BLOCK.

Two cornish boilers, 22 feet long and 5 feet diameter. (See Description.)

One steam-engine with pumps, value \$1000 (See Description.)

Iron condensed water-tank, 7 feet long, 4 feet deep, and 4 feet wide.

Six and four inches cast-iron steam pipe from boilers, to supply all the steam coils in vaults, with the necessary stop-valves.

One inch and  $\frac{3}{4}$  in. wrought-iron steam tube, to make the necessary quantity of coils for warming the building; the coils are all placed in the vault in basement.

Galvanized iron warm-air pipes, to carry the heated air from vault across the basement corridor to the flues that are to be built in the walls. One cast-iron warm-air register to each room in the Building, with a sufficient number in the corridors to bring the warmth up to the specified temperature, say, two ventilating registers in each room, one near the floor, the other near the ceiling.

The requisite number in the corridors, fixed near the floors and ceiling, similar to the rooms.

One ventilating register in each living room in the basement, fixed near the ceiling.

Two cast-iron chimney-tops, to commence in the shaft from the attic floor, and to continue to the top of the smoke-shaft, and ventilating ditto or steam coils placed instead of these, if thought advisable.

Two in. iron pump; pipe from pump to connect to the rising main, as specified in plumber's work.

Sets of ventilators to be furnished to me, as specified in iron-founders' specification.

All smoke-flues, ventilating-flues, ventiducts, cold-air ducts to be built by the Department to descriptions herewith furnished, and all excavation, masons', bricklayers', and joiners' work to be done.

N<sup>o</sup>. 1 and 2.

Description of Plan of warming and ventilating the Parliament Buildings by steam, on the vault system.

In the basement, there will require to be constructed brick vaults, as shewn on plan, as near as possible under the rooms and corridors to be

warmed ; these vaults will have cold-air ducts running underneath their entire length, the cold air being introduced into the vaults, along each side, immediately under the steam-pipes.

The external fresh air will be carried into this vault from outside of the building, by ducts placed under the basement-floor.

In the brick walls of the rooms and corridors, flues are to be left to connect to the vault, with openings near the floor and ceilings in each room, and along the corridor. (See Plan.)

Where the walls do not come immediately over the vaults, galvanized iron-pipe will be placed to convey the heated air from the top of vault to the flues in the walls. (See Plan.)

The air will be warmed in the vaults by wrought-iron steam-pipes carried along their entire length, said pipes to be warmed by steam generated in the boiler in central court. (See Plan.)

In the central court, will be the boiler-house, containing six cornish boilers, 20 feet long and 5 feet diameter, with a steam-engine and hydraulic pump, also a wrought iron condensed water-cistern. (See Plan.)

The library will be warmed from the vault underneath by 5 circular registers in the floors, instead of registers placed in the walls, which would be injurious to the books. (See Plan.)

The House of Assembly and Legislative Council, I propose to warm by conveying the warm air up from the warm-air vaults (immediately under the members' and speaker's platform) to the space between the floors and platform, to be there allowed to come into the house through perforated iron gratings, which will form the risers in front of the platform and ends, also along the back of the platform ; by this plan the warm air will be equally distributed over the house, without causing unpleasant drafts, or making one part warmer than another : the risers of the steps to be made of cast-iron of approved patterns. (See Plan.)

The rooms and corridors of the ground and first floor, together with the rooms in the seven towers, I propose to warm by flues, as before mentioned, leading from the warm-air vaults in the basement, through the walls that divide the corridors from the rooms, with openings near the floors ; these openings to have a warm-air register, the flues to be built as smooth as possible inside.

The basement, on account of being on the same level as the warm-air vault, cannot be warmed on the same system ; I propose therefore to warm it by placing steam-pipes along the base or skirting of all the rooms and corridors that require to be heated.

CHARLES GARTH.

## VENTILATION.

Ventilation of library and rooms of single story round ditto; under the roof of the single story round the outside of library;—I propose to have a horizontal ventiduct connected to two cowls or ejectors, placed on the roof on each side of the library, each ejector to have fitted thereto a steam coil to cause a strong current in the ventiduct, which ventiduct is to be connected to flues built in the inner or library wall, as shewn on plans with ventilating register, say 16 in number placed near the floor. (See Plan.)

I also propose, that there shall be a means of opening the windows in the lantern of library when required. The rooms outside the library, and rooms of basement under, to be ventilated into the same ventiduct, through flues in the same walls, and in the same manner. (See Plan.)

*House of Assembly and Legislative Council.*

I propose to ventilate these Houses by having the pierced work (as provided for in the builder's specification) round the panels in ceiling that receive the glass, and between the inside collar beams and rafters, and the spaces thus formed are to be made into ventilating flues, said flues to be carried under the roof to the ventilating towers, in which towers are to be placed steam coils to cause a strong current of air from the ceilings of houses &c. ; in addition to this, I propose to have the wall that supports the front of the galleries and that *divides* the house from the corridor, built hollow, or with a series of flues, these flues to open into the house, through perforated ornamental work, placed round the front of the gallery, immediately under the panels and cornice. Some of these flues to be continued under the steps of gallery opening through the floors, in close proximity to the external walls, through perforated gratings placed in the floors. (See Plan.)

These flues are to continue through the wall, down into a horizontal ventiduct running under the floor of basement to the furnaces of the steam-boilers, or to a space to be left round the boiler chimney-flue (as may hereafter be determined on): by this means a downward current can be obtained, which will carry off all the vitiated air, and prevent all strong currents or drafts, which are highly objectionable, and at the same time prevent the fresh warm air (in winter) from being carried off too quickly into the upper ventiducts over the ceiling. (See Plan.)

To ventilate the smoking-rooms, picture-gallery, wardrobes, reading-rooms, and all other apartments in the single story, I propose to use the

perforated cornice, or have a ventilating register immediately under the cornice, to be connected to a horizontal ventiduct under the roofs, said ventiduct to be connected to the ventilating ejector on roof.

In addition to the above, (for winter ventilation) I propose to have ventilating registers close to the floor, for carrying off the vitiated air, flues from which to be left in the walls, said flues to be connected to the ventiduct under the roof, and connected to the ventilating ejector on roofs,—with a steam-coil in each ejector, or to a space to be left round the smoking-room-chimneys.

### *Ventilation of Rooms, Corridors &c.*

I propose to ventilate the rooms and corridors of the remainder of the Parliamentary Buildings, by means of flues built in the division-walls, these flues to terminate in attic, and to be there connected with a ventiduct running horizontally the entire length of the building, said ventiduct to be connected to the ventilating towers before-mentioned, or to the space round the boiler chimney-flues.

There will be in each room, connected to the before-mentioned flues, one ventilating register as close to the ceiling as possible for summer ventilation, and another as close to the floor as possible for winter ventilation and for carrying off the vitiated air ; there will also be the same arrangement for the whole of the corridors.

### No. 2.

This system can be arranged for hot water instead of steam, the principle is nearly the same, the expense being the only difference.

CHS. GARTH.

### No. 3.

Description of the plan of warming the Parliamentary Buildings by the coil system.

The six boilers will be placed in the boiler-house, central court in the same manner as for the vault system : all the vaults in basement can be dispensed with, except the long vault that leads from the front to the rear of building.

The library will be warmed by five coils placed on the floor, and covered with ornamental cast-iron screens or pedestals with marble tops, to be placed about the same places as the registers on the vault system.

The House of Assembly and Legislative Council will be warmed by placing coils under and behind the members' and speaker's platforms, the warm air to come into the house through ornamental perforated gratings, that will form the risers of the platform steps, and the coils on the walls behind the platform will be concealed with perforated iron gratings.

The smoking-rooms, picture-gallery, and reading-room, to have two coils in each, placed on the floor, and covered with an ornamental cast-iron screen or pedestal with marble top.

The principal entrance to have two coils placed on the floor, covered with ornamental cast-iron screen or pedestal with marble top, placed about the same places as the registers on the vault system.

The committee-room stairs, and the public stairs, will have each one coil with ornamental cast-iron screen or pedestal with marble top, placed on the ground floor, about the same places as the register on the vault system.

The other stairs to have each a coil at the foot, but not covered with screens, &c.

The corridors of the ground and first floors, to be warmed by coils placed in recesses left in the brick walls that separate them from the rooms; these recesses will be nine inches deep and of an average size of three feet high by six feet long. (See Sketch.)

The rooms of the ground and first floors, to be warmed by coils placed in recesses left in the walls that divide them from the corridors; these recesses to be nine inches deep, of an average size of three by four feet; to have perforated ornamental cast-iron screens to conceal the pipes, each coil to have a valve to stop off the heat when required. (See Sketch.)

The basement to be warmed by placing the steam-pipes round the base or skirting of all the rooms or corridors that require to be warmed; these pipes not to be concealed; all the main steam-pipes to supply the coils will be carried along the ceiling of the basement corridors, with cross branches to the corridor walls, &c. The branch steam-pipes to be carried up to supply the coils in recesses left in the brick corridor walls; all pipes to be concealed in the ground and first floor, but not in the basement. Ventilation same as the vault system.

CHARLES GARTH.



## N°. 4.

Description of the plan of warming the Parliamentary Building, by steam-pipes placed under the floors, and covered with ornamental perforated iron gratings.

The wrought-iron steam-pipes are laid in recesses left in the floors, and covered by cast-iron ornamental perforated gratings. Those in the corridors run down the centre the entire length of corridors, the grating being twelve inches wide covering. Those in the rooms run along the floors close to the external walls of the building, and are covered with a grating nine inches wide. These recesses will require to be three inches deep.

The Assembly and Legislative Council Chambers will have the pipes in the members' and speaker's platform as in the coil system, together with pipes laid under a twelve-inch grating round the external walls of the room, with pipes under the same kind of grating, up the centre of the room.

The library will have to be warmed the same as by the coil system, as there will not be a possibility of placing the required quantity of pipes in recesses in the floor.

The basement will be warmed the same as detailed in the vault system.

All main steam-pipes will be carried near the ceiling of the basement corridor, with branches to the respective floors.

The boilers same as the vault system.

The ventilation will be the same as the vault system, with the exception, that the ventilating registers will be placed in the divisions between the corridors and the rooms, instead of between the respective room divisions.

CHARLES GARTH.

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*Departmental Buildings.*

The same plans, general description, &c., will answer for the Departmental and the Parliamentary Buildings, with the necessary modifications to suit these buildings. The boilers for the right-hand block will be twenty-two feet long and five feet in diameter; those for the left-hand block to be the same as for the Parliament Building.

The ventilating flues and ventiducts in the attic, will be the same as in the other building.

The flues for the hot air to be similar.

The basement walls to be altered, and vaults constructed as per plans.

*Description and Specification of Boilers.*

The boilers, I propose to be on the cornish principle, 20 and 22 feet long, 5 feet in diameter, with inside flue and furnace 3 feet diameter. The outside or shell of boilers to be  $\frac{1}{4}$  in. thick, the furnace and flue  $\frac{3}{8}$  in., made of the best boiler plate, the ends to be  $\frac{3}{8}$  in. thick, made of the best low moor boiler plate. Each boiler to be provided with a steam drum, one lock up, and one lever safety-valve, one alarm water-gauge, three gauge-cocks, one Ashcroft's steam-gauge, one syphon mercury-gauge, one brass blow-off cock, with the necessary steam-pipes, waste steam-pipes, waste-water or blow-off pipes, feed-pipes and valve, two 4-inch steam-valves, and every thing necessary that the low-regulating steam-boilers on board of steamers require. The pressure of steam at which the building can be warmed need not exceed ten (10) pounds per inch, but I propose to arrange the safety-valves, gauges, &c., to carry not more than twenty (20) pounds per square inch, as I consider that is ample for the steam-engine, or any other purpose.

The steam-engine will be of a first class horizontal kind, complete in every respect; with two force and lift pumps of brass, to be connected to the main shaft of engine by eccentrics or disks, these pumps will be able to pump 250 gallons per minute to the tank in towers. This engine, with its pumps, will be of the value of \$1000. Not knowing from what depth the water has to be drawn, I cannot give a drawing of the pumps, as they will differ very materially should the draft be more than thirty feet deep.

If the water has not to be pumped from too great a depth or distance, a WOODWARD'S STEAM PUMP might be introduced—the cost of a first rate article will be \$750. A steam pump, to pump the same quantity of water, such as is used on the steamers navigating the St. Lawrence, will cost \$400. This pump makes considerable noise in working, which would be objectionable for these buildings; not knowing what would be preferred or required, I have calculated for the steam-engine and pump at \$1000. I have also allowed for six rising mains of 2-inch wrought-iron pipe, from the pump to the six tanks in towers, with valves to each, so that the water can be pumped to one without interfering with the others.

I have also allowed for a wrought-iron condensed water-tank, 14 feet

long, 6 feet wide, and 4 feet deep; this tank is necessary to have a supply of water on hand for the boilers, in case any accident should happen to the pump or pipes.

CHARLES GARTH.

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Montreal, 14th January, 1860.

Remarks on the certificates herewith enclosed, respecting the operation of steam and hot water warming-apparatus, fitted up by me in the following buildings.

CERTIFICATE.

N<sup>o</sup>. 1.—From the Roman Catholic Bishop of Montreal, for his residence and church. The residence is a brick building 110 feet long, 48 feet wide, and 5 stories or 58 feet high. The church is 154 feet long, 60 feet wide, and 42 feet high. These buildings are warmed on the No. 4, or tube system.

N<sup>o</sup>. 2.—From the Ladies of the Sacred Heart, for their convent at Sault au Recollet. This building is a gothic cut-stone building, 200 feet long, 50 feet wide, and 5 stories or 66 feet high; it is a detached building exposed on all sides. This is also warmed on the N<sup>o</sup>. 4, or tube system.

N<sup>o</sup>. 3.—From the Revd. Mr. A. F. Trudeau, priest, Superior to the Ladies of the Providence Convent in Montreal, for the new wing of their building.

It is built of stone, 105 feet long, 52 feet wide, and 5 stories or 56 feet high. This building is warmed on the N<sup>o</sup>. 3, or coil system, detailed drawings of which I enclose for your inspection.

N<sup>o</sup>. 4.—From the Ladies of the « Congregation de Notre-Dame », for their convent at Montreal. These buildings are all of stone, and form three sides of a square, the dimensions being as follows, viz : One building 300 feet long, 60 feet wide, and 56 feet high; another building 326 feet long, averaging 30 feet wide, and 4 stories or 38 feet high; and a church 100 feet long, 50 feet wide, and 40 feet high. These buildings are about as difficult to warm as any buildings can be; the boilers are situated in the cellar under the church, and are over 150 feet from the remainder of the buildings. The steam-pipes being carried in an underground vaulted corridor, through the garden and the rooms at the extreme ends of the buildings, are not less than 350 feet

from the boilers, and though the work is not yet quite completed, still it is giving them satisfaction. This building is warmed on the N°. 3, or coil system.

N°. 5.—From Mr. Thos. McGinn, for the new wing of the Montreal gaol. This building is of stone, 90 feet long, 38 feet wide, and 57 feet high. It is warmed on the N°. 1 or vault system, by steam, and ventilated in a very effective manner, and I am of opinion that the principle adopted in this building, with some modifications, is the system that will be most likely to give satisfaction in the Parliament Buildings. I inclose the detailed drawings of the apparatus used in this building, by which you will perceive that it is very similar to the N°. 1 and 2 systems that I propose for the Public Buildings, being, in my opinion, the only system that can effectually meet what is required for the Parliament Houses.

The systems N°. 3 and 4 cannot be surpassed for heating, but you can have no fresh air admitted to the rooms by either of these systems, except such as finds its way in by the opening of doors and windows, and crevices in walls, &c., &c.

Another advantage the N°. 1 and 2 systems have, is, that in summer, you can throw through the same vaults, flues, and registers, a current of cool fresh air into all the rooms, corridors &c. This can be effected by allowing cold water to circulate through the pipes in vaults, and turning the steam on to the coils, in the ventilating towers and ejectors, thereby cooling the atmosphere in the rooms &c., and drawing off the vitiated air by the ventilating-registers.

N°. 6.—From the Prothonotaries of Montreal. For a portion of the new Court House, warmed by steam tubes, on system N°. 4. This building was intended to be warmed by the fan system, and the apparatus there now was for that purpose; but on account of changes made in the construction of the building, such as fire-proofing &c., after the arrangements were nearly completed, it necessitated the cutting off of some of the principal flues, thereby causing the extreme ends of the building to be deficient in heat; this has since been remedied by placing steam tubes round the rooms, which effectually warm them. The central portion of the building and the court rooms, are still warmed by the fan system, and the whole building at the present time can be effectually heated, though there are still improvements that could be made at a small expense, that would make the apparatus more simple and, consequently, easier managed.

It may not be out of place for me to remark, that ever since the intro-

duction of steam-warming into the court-house, the principle has met with the most determined opposition from several members of the Bar, who seem to be prejudiced against it, without giving any reason, except that they expect to be blown up; and the keeper of the court-house has from the commencement kept up a systematic opposition, and up to the present time rather prevents than facilitates its proper management.

Respecting the ventilation, especially that of the criminal court room, the alterations before-mentioned, and the placing of the ventilating-flues in the external, instead of the internal walls, are the principal causes of complaint; these flues were built before the contract was given out for warming the building. Much could also be done to improve the ventilation, and at a comparatively small outlay. Much has also been said about the consumption of fuel in this building. It certainly did consume considerably at first, on account of the fan having to force the air through too small flues and registers at the extreme ends, which was caused by the alterations before-mentioned, but since the steam tubes have been placed at the ends, and some other trifling alterations made, the consumption of fuel has greatly decreased, as follows, viz :

First year . . . .	636	cords of wood,
Second year . . . .	501	“ “
Third year. . . .	386	“ “ (Winter of 1858-1859.)

These figures speak for themselves and amply repay the Province for the small outlay incurred by these alterations.

N°. 7.—From Hugh Allan, Esquire, for his residence, St. Catherine street.

This building is a first class cut-stone house 40 feet square and 2 stories high, with basement. It is warmed by the circulation of hot water in pipes, placed in floors inside of all exterior walls; this system is similar to N°. 4 steam system.

I have not thought it necessary to hand in more certificates, as the foregoing refer to large buildings, and the Public Buildings being also large, I thought that they would be sufficient. Still as there is one more very large building, the Lunatic Asylum, Toronto, that I warmed 11 years since, on the high-pressure or Perkins system of hot water, and which was (like our Montreal Court-House) at the time condemned as burning too much fuel, and extremely perishable, and would certainly have to be taken out in a year or two, and some other system adopted; and as it is now, and has been ever since, in successful operation, I will only quote, in

proof of it, Dr. Workman's words to me in the Asylum about a year since. He said : " I came into this Asylum, as its Medical Superintendent, prejudiced against this system of warming, and my first step was to investigate the subject. For that purpose I visited the Asylums and many other Public Buildings in the United States, among the rest found an Asylum at Utica in the State of New-York, almost similar to ours, which was warmed by steam on the fan system, and found that they consume nearly double the fuel that we do, that their apparatus was more difficult and expensive to manage, and this was the best I could find there. I therefore returned home fully convinced that we had as good a system, if not the best, that could be adopted ; " and I can refer the Commissioners to him, as he mentioned that if he could at any time remove the false impression that had gone abroad respecting it, he considered it but an act of justice to me to do so. I have not seen Dr. Workman since his return from Europe, whither he has been this summer for the purpose of visiting other Asylums, and therefore do not know if he has found any thing better adapted. I do not recommend this system for the Public Buildings, as there are some of its details, which, though suitable for an Asylum, are not for Parliament Buildings.

I can also refer to many more parties for whom I have put up warming-apparatus for many years past ; but as none of them are as suitable for the Public Buildings as those mentioned, I hope the Commissioners will consider them sufficient ; and trust that, after spending a large amount of money in endeavouring to ascertain the best way of warming and ventilating buildings in this climate, and having had twenty years, in fact more practical experience than any other person in this Province, in the decision that the Government may come to, my claims will not be overlooked.

I have the honor to remain,

Your obedient Servant,

CHARLES GARTH.

To the Honorable JOHN ROSE,  
Chief Commissioner, Public Works,  
Quebec.

## GENERAL CONDITIONS.

To be attached to the specification and contract for the heating and ventilation of the Parliament and Departmental Buildings in the City of Ottawa.

1st. The whole of the works are to be executed in the best and most workmanlike manner, and all the materials are to be unexceptionable in quality ; and workmanship and materials must be prepared, provided, and executed to the entire satisfaction of the Commissioner, his Architects, or Officer in charge. And all boilers, valves, and guages are to be provided to the satisfaction of the present or any future Provincial Inspector of Steamboats or Steam-Engines.

2nd. The works are to be done under the Superintendence of the Architects or the Officer in charge, and the Contractor shall commence and proceed with the same in such order and at such a rate of progress as the Commissioner, by his Architect or Officer in charge, may direct. The responsibility attached by these conditions to the proper execution and efficiency of the works, to remain with the Contractor notwithstanding.

3rd. Each block of building must have a first class engine of sufficient power to pump 250 gallons per minute, in addition to any work required or necessary in connection with the heating and ventilation. The boilers and engine-house of the parliament block, to be in the large central court. And the boilers and engines of the departmental blocks, to be in rooms shewn on the basement plans. Pumps of the best quality and of the description which will be specified, to be included in the contract. The service from the pumps to the tanks and boilers to be also provided and included in the specification and contract.

The water-service to the pumps is not to be included in this contract.

4th. The specification is to state the number and description of the boilers, which must be of the best quality ; and if the mode of heating is proposed to be by steam, state the power and capacity of the boilers.

5th. Every hall, lobby, corridor, passage, staircase, &c., throughout the three blocks of building, is to be heated and kept at the temperature of seventy-five degrees Fahrenheit. And all rooms and offices, the Legislative Chambers, library, and all other apartments, water closets and lavatories, &c., to be heated and kept at the temperature of sixty-five degrees Fahrenheit. Proper stop-cocks to be placed so as to regulate every department and section of each of the buildings.

6th. The ventilation may be effected through the floors, walls, roofs, and ventilating-towers &c., but the method must be clearly specified and shewn. It must be in every case arranged so as to require as small an amount of machinery as possible, and must be executed in fireproof materials.

7th. The boiler-houses, drains, cold-air ducts, and smoke-flues will be provided by the Government, as will also the materials and labour necessary in setting the boilers or furnaces. But the responsibility as regards the convenience of the arrangements, and the security and efficiency of the work will rest with the contractor; and all damages that may be done to any portion of the works included in the contract for the erection of the several buildings, must be rectified by, and at the cost of the Contractor for the heating and ventilation. And all jobbing attending the fitting up and fixing of the adopted heating and ventilating apparatus, must be done in the most careful and complete manner by the Contractor under this contract.

8th. Payments shall be made to the party of the first part, within ten days after an estimate of the Architect or Officer in charge shall have been received by the Commissioner, specifying the amount of work done during the month then ending; but that nevertheless it shall be lawful for Her Majesty to withhold from the party of the first part and retain thirty per cent. out of the amount of the estimates, until the perfect completion of the work, and the acceptance of the same by the Commissioner; which thirty per cent., so withheld and retained, shall continue to be withheld until the whole of the works shall have been tested for thirty months. And if, at the expiration of that time, it shall be found that the whole of the work and apparatus is perfect, sound, substantial, and in successful operation, the Architects or the Officer in charge shall give his final certificate; and that, in forming his final estimate, the Architect or other Officer in charge shall not be bound or governed by the preceding monthly estimates, which shall be taken and considered merely as approximate.

9th. That if, by the report of the Architects or Officer in charge, employed by the Commissioner in that behalf, it shall appear that the establishment and rate of progress, at and in the said works, are not such as to ensure the completion of the same within the time herein prescribed, or if the party of the first part shall persist in any course, violating the provisions of this contract, Her said Majesty shall have the power at her discretion, by the Commissioner or his successor in Office, without previous notice or protest, and without process or suit-at-law,



either to take the work, or any part thereof, out of the hands of the party of the first part, and to relet the same to any other Contractor or Contractors, without its being previously advertised, or to employ additional workmen, and provide materials, tools, and other necessary things, at the expense of the party of the first part; and the party of the first part in either case shall be liable for all damages and extra costs and expenditure, which may be incurred by reason thereof, and shall, in either of such cases, likewise forfeit all moneys then due, under the conditions and stipulations, or any or either of them herein contained.

10th. That in case of failure in the contract, the party of the first part shall thereby forfeit all right and claim to the said thirty per cent., or any part thereof remaining unpaid, as well as to any moneys whatever due on this contract.

11th. That all materials for the said work shall be inspected and approved of, before being used, either by the Commissioner or such persons as he may appoint; and any materials disapproved of shall not be used in the work, and if not removed by the party of the first part when directed by the Commissioner or his Architect or Officer in charge, then the rejected materials shall be removed by the Commissioner, his Architect or Officer in charge, to such place as they may deem proper, at the cost and charge and at the risk of the party of the first part; but it is distinctly understood and agreed, that the inspection and approval of materials shall not in any wise subject Her said Majesty to pay for the said materials, or any portion thereof, unless employed or used in the said works, nor prevent the rejection afterwards of any portion thereof, which may turn out to be unsound or unfit to be used in the work; nor shall such inspection be considered as any waiver of objection to the work on account of the unsoundness or imperfection of the materials used.

12th. That it shall be in the power of Her said Majesty to make payments or advances on materials, implements, vessels, or tools of any description procured for the works, or used or intended to be used about the same, in such cases and upon such terms and conditions, as to the said Commissioner may seem proper; and that whenever any advance or payment shall be made to the party of the first part upon any tools, implements, or materials of any description, the tools, implements, or materials, upon which such advance or payment shall be made, shall thenceforward be vested in and held as collateral security by Her Majesty, her heirs and successors, for the due fulfilment by the party

of the first part of the present contract ; it being, however, well understood that all such tools, implements, or materials of any kind are to remain at the risk of the party of the first part, who shall be responsible for the same until finally used and accepted as part of the work by the Commissioner ; but the party of the first part shall not presume to exercise any act of ownership or control whatever over any tools, implements, or materials, upon which any advance or payment shall have been so made, without the permission in writing of the Commissioner.

13th. That should any overseer, mechanic, or workman employed on or about the work, give any just cause of complaint, the party of the first part shall, immediately upon the application of the Commissioner, his Architect or officer in charge, dismiss such person or persons forthwith from the works, and he shall not be employed again thereon without the consent of the Commissioner ; and should the party of the first part continue to employ such overseer, mechanic, or workman, the party of the first part shall forfeit to Her Majesty, her heirs and successors, the sum of twenty dollars, current money aforesaid, for each and every day during which such overseer or workman shall be employed on the works, after such application as aforesaid ; and all sums so forfeited shall be deducted from and out of the amount which the party of the first part may be entitled to receive from Her said Majesty at the commencement of the month next ensuing such forfeiture, or at a later period, as Her Majesty shall deem proper.

14th. That if any change or alteration, either in the position or details of any part of the work, shall be required by the said Commissioner, during the progress thereof, the party of the first part is hereby bound to make such alteration or change ; and if such alteration or change shall entail extra expense on the said party of the first part, either in labour or materials, the same shall be allowed to the said party of the first part ; or should it be saving to the said party of the first part, in either labor or materials, the same shall be deducted from the amount of this contract ; in either case the amount is to be determined by the estimate made by the Commissioner, his Architect or Officer in charge. But no such change or alteration, whatever may be the extent or quality thereof, or at whatever time the same may be required to be made, pending the said contract, shall in any wise have the effect of suspending, superseding, annulling, or rescinding this contract, which shall continue to subsist, notwithstanding any such change or alteration ;

and every such change or alteration shall be performed and made by the said party of the first part, under, and subject to the conditions, stipulations, and covenants herein expressed, as if such change or alteration had been expressed and specified in the terms of this contract ; and should the said party of the first part be required by Her Majesty, represented as aforesaid, to do any work, or furnish any materials, for which there is not any price specified in this contract, the same shall be paid for at the estimated prices of the Architects or Officer in charge of the works ; but no change or alteration as aforesaid whatever, and no extra work whatever, shall be done without the written authority of the Commissioner, or his Architect or Officer in charge, given prior to the execution of such work ; nor will any allowance or payment whatever be made for the same, in case it should be done without such authority.

15th. That the party of the first part shall not in any way dispose of, sublet, or relet any portion of the work embraced in this contract, except the procuring of materials.

16th. Should any difference of opinion arise as to the construction to be put upon any part of the specification or plans, the same shall be determined by the Commissioner alone, and such determination shall be final and conclusive, and binding upon the parties to this contract, and every of them.

17th. And in all cases of defective description or delineation in either the drawings or the specification, the explanation given by the Commissioner, or his Architect or Officer in charge, shall be received, and shall be final and binding upon the parties to this contract or either of them ; and wherever neither the drawings or the specification contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which minor and detail parts are common, usual, and proper in workmanship of this character, and which are obviously necessary to the due completion or stability of the work, all such parts are to be found, provided, and fixed by the contractor, and are to be considered to be included in his contract : it being the intention of these conditions that all such work of every kind, as may be necessary for completely finishing the work proposed, for the rectification of any failure from whatever cause arising, and the well maintaining, sustaining, and supporting the whole of the works, as well as any and whatever alteration and addition that may be made therein, so that the whole may remain sound and firm—all such minor parts and details are implied in the said

specification and drawings, although the same are not therein specifically expressed ; and that in this, as well as in other matters, no reference to any other person than the Commissioner, his Architects or Officer in charge will be allowed or admitted.

18th. The care of the works included under this contract or any section of it, together with whatever appertains or belongs thereto, shall be entirely at the charge of the party of the first part, who shall be jointly and severally and wholly and solely liable and responsible for any and all loss, damage, detriment, and injury, that may arise or be sustained, both on this contract and the contract for the erection of the several buildings, in so far as they may be affected by the execution or neglect in the execution of the works of this contract, during the progress of the works; and until the same shall be completed and have been delivered up to the Government, and certified as complete and perfect by the Architects or other Officer in charge. And it is hereby agreed that all drawbacks, reserves, deductions, or other funds, held in hand as security by the Commissioner, on behalf of Her Majesty, from the party of the first part, will, in the event of any damage, be forfeited to Her Majesty by the Contractor or party of the first part, so far as may be necessary for the reconstruction, restoration, and repair of work so damaged.

19th. The works to be commenced immediately, and to be proceeded with at such rate of progress as in the opinion of the Commissioner, his Architects or Officer in charge, may be proper, and to be entirely completed and given up, under certificate of the Architects or Officer in charge, on or before the 1st day of April, 1862. And in failure whereof the party of the first part shall pay or cause to be paid to Her Majesty, as liquidated and ascertained damages and not by way of fine, the sum of two hundred dollars per week, for every week or part of a week that the works may remain incomplete after that time ; and such sum or sums the Commissioner shall be at liberty to deduct from any sum due or to become due to the party of the first part, herein-before called and designated Contractor.

20th. That any notice or other paper connected with these presents, which may be required or desired on behalf of Her Majesty to be served on the party of the first part, may be addressed to the party of the first part at his domicile or usual place of business, or at the place where the work hereby contracted for is to be carried on, or left at the Post-Office ; and any paper so addressed and left at the Post-

Office aforesaid, shall, to all intents and purposes, be considered legally served.

21st. That should the party of the first part not complete the work herein contracted for, at the period agreed upon as above mentioned, the said party of the first part, shall be liable for, and shall cause to be paid to Her Majesty of the second part, all salaries or wages which shall become due to the person or persons superintending the work on behalf of the said Commissioner, from the above named period to completion, or until the same shall actually be completed and received.

22nd. That none of the foregoing clauses or conditions shall be considered comminatory (comminatoires), but, on the contrary, shall be strictly observed and enforced ; the said clauses and conditions being essential for the preservation of the interests of the public, and expressing the exact intention of the parties thereto ; and without the said clauses and conditions, and each of them, the present contract would not have been entered into.

23rd. That should the amount now voted for this service by the Legislature be at any time expended previous to the completion of the work now contracted for, the said party of the first part may, or not, as he may see fit, on receiving a notice in writing from the said party of the second part to the above effect, stop the work ; but in any case, the party of the first part shall not be entitled to any further payment for work done after the service of the notice above referred to, until the necessary funds shall have been voted by the Legislature ; nor shall the said party of the first part have any claim for compensation or damages for the said suspension of payment.

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**No. 38.**

Ottawa, 9th. February, 1860.

**48348.**

To the Honorable,

The Commissioner of Public Works.

Sir,

We have the honor to report to you, that we have, in compliance with your instructions of the 28th ultimo, arranged with Mr. Garth the various details respecting the warming and ventilating of the Parliament Buildings ; and he will forthwith prepare the necessary drawings and specifications for our inspection, and, if found correct, will submit them for your

approval, and at the same time we will report upon the modifications we have found necessary to make.

We have the honor to be,  
Sir,

Your obedient servants,

FULLER & JONES.

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**No. 39.**

**34122.**

DEPARTMENT OF PUBLIC WORKS,  
QUEBEC, 16 Oct. 1860.

GENTLEMEN,

I am directed to request you to arrange a meeting at this Office, at an early day, in conjunction with the Architects of the Departmental Buildings and the Contractor for the heating and ventilating of the Public Buildings, Ottawa, for the purpose of agreeing upon and drawing up a specification for the contract for heating &c., in accordance with the plans you have agreed upon, and the tender and conditions approved by Order in Council.

I am further to state that this specification is necessary to enable this Department to have the contract executed, and that no money can be paid to the Contractor until it is signed.

T. TRUDEAU,  
Secretary.

MESSRS. FULLER & JONES,  
Architects, Ottawa.

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**No. 40.**

**34124.**

DEPARTMENT OF PUBLIC WORKS,  
QUEBEC, 16th. Oct. 1860.

GENTLEMEN,

I am directed to request you to arrange a meeting at this Office, at an early day, in conjunction with the Architects of the Parliamentary Buildings and the Contractor for the heating and ventilating of the Public Buildings, Ottawa, for the purpose of agreeing upon and drawing up a specification for the contract for heating &c., in accordance with the plans you have agreed upon, and the tender and conditions approved by Order in Council.

I am further to state that this specification is necessary to enable this Department to have the contract executed, and that no money can be paid to the Contractor until it is signed.

T. TRUDEAU,  
Secretary.

MESSRS. STENT & LAVER,  
Architects, Ottawa.

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No. 41.

QUEBEC, 30th November, 1860.

50605.

SIR,

I beg to call your attention to the letter of the Architects of the Departmental Buildings at Ottawa, N°. 45,595, and to those of the Architect of this department N°. 45,654, and N°. 45,863, on the subject of the accommodation provided by the present contract plans for the several departments of the Government.

On comparing the contract plans with the original printed statement of the accommodation required for the Government Departments (with N°. 45,863) there is found to be a deficiency of *seven* rooms; and comparing the latter with the accommodation now actually required, there is a further deficiency of nine rooms, making in all sixteen rooms which ought to be provided in addition to the present plans, for the proper accommodation of the Government service.

The accompanying statement will show, better than any written explanation, precisely what extent of accommodation was proposed to be provided for each Department, by the original printed statement before referred to; also the amount provided by the present contract plans; and lastly, the amount now actually required, without making any allowance for the future increase of the several Departments. It shows that with regard to the right-hand block, ample provision has been made for the particular Departments assigned to it; but that in the left-hand block there will be a deficiency of 14 rooms for the Finance Department (the Customs and Audit branches not being provided for), one room for the Crown Lands, and one for the Post-Master General.

To meet these requirements the Architects have sent in plans proposing an extension of the N. E. wing, giving 16 additional rooms; but, not being covered by the contract, no order has been given for the

extension ; and it now rests with this Department to take such action in the matter as the case may demand. The position of the work on this wing is such as to admit of the extension being carried out in harmony with the rest of the design, and this addition to it will make the left-hand block correspond better with the right-hand block, and materially improve the general effect.

I should have brought this matter under your notice at an earlier date, if a decision upon it had sooner been necessary ; but the buildings are now advanced to that stage where it is desirable that the extension, if to be made by the present contractors, should be authorized, in order that the materials for it may be got out during this winter, ready for the early prosecution of the work next spring. The whole of these Departmental buildings must be roofed in and enclosed by the end of the next building season, and the heating-apparatus put in operation for the interior finishing, in order to their completion by the time specified, February 1862.

I beg therefore to submit, whether this extension is not unavoidable, and whether, in that case, it is not expedient to call upon the Architects for an estimate of its cost, with the view of entering into an arrangement with the present Contractors for its construction.

I have the honor to be,

Sir,

Your obedient servant,

SAMUEL KEEFER,  
Deputy Commisr.





## DEPARTMENTAL BUILDINGS, OTTAWA.

Statement shewing the extent of accommodation provided by the present contract plans; that proposed by the original printed statement; and that now actually required.

IN RIGHT-HAND BLOCK.	According to Printed Statement.	According to Contract Plans.	Now requi- red.
Provincial Registrar rooms . . . . .	4	6	6
Adjutant General . . . . .	12	11	11
Indian Department. . . . .	4	4	4
Receiver General . . . . .	11	12	12
Crown Law Department . . . . .	9	10	10
Agriculture . . . . .	8	8	8
Governor General and Staff . . . . .	6	6	6
Executive Council . . . . .	15	16	16
Provincial Secretary . . . . .	12	12	12
Board of Railway Commissioners . . . . .	0	2	2
Civil Service Board. . . . .	0	2	2
Total. . . . .	81	89	89
IN LEFT-HAND BLOCK.			
Crown Lands, Woods and Forests . . . . .	30	29	30
Public Works . . . . .	15	16	15
Finance, Customs and Audit. . . . .	24	10	24
Post-Master General . . . . .	20	19	21
Total. . . . .	89	74	90

## ABSTRACT.

The printed statement called for . . . . 170 Rooms,  
 The contract plans provide for . . . . 163 "  
 There are now required . . . . 179 "

Making a difference of . . . . 16 " required  
 to be added to the left-hand block.

S. KEEFER.

30th November 1860.

**CONTRACT**  
**FOR**  
**HEATING AND VENTILATING**  
**THE**  
**PARLIAMENTARY AND DEPARTMENTAL BUILDINGS,**  
**OTTAWA CITY, C. W.**

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THIS INDENTURE, made the twelfth day of January, in the year Eighteen hundred and sixty-one, between CHARLES GARTH, of the City of Montreal, in the Province of Canada, hereinafter throughout designated as « The Contractor, » of the first part, and HER MAJESTY QUEEN VICTORIA, represented herein by the Honorable THE COMMISSIONER OF PUBLIC WORKS, of the Province of Canada, hereinafter throughout designated as « The Commissioner, » of the second part.

**W**HEREAS the Government of Canada, in pursuance of an Act of Parliament of the said Province, and of certain resolutions to that effect of the Legislature of the said Province, have now in the course of erection at the city of Ottawa, in the said Province, certain buildings for the use, occupation and accommodation of the Legislature of Canada, and of the officers and servants thereof; and which buildings are hereinafter throughout designated as « the parliamentary buildings; » and certain other buildings for the use and accommodation of the several Public departments of Her Majesty's Civil and Militia service of Canada, and of the officers and servants thereof, and which last mentioned buildings are hereinafter throughout designated as, « the departmental buildings. » AND WHEREAS the Contractor hath agreed to and with Her Majesty the Queen, for the heating and ventilation of the parliamentary buildings and of the departmental buildings, and to supply all proper and requisite material therefor, upon the terms and subject to the conditions,

stipulations and agreements hereinafter contained. Now this Indenture witnesseth that in consideration of the sum of sixty-one thousand, two hundred and eighty-five dollars, of lawful money of Canada, to be paid to the Contractor, his executors, administrators and assigns, by Her Majesty, Her Heirs and Successors, in manner hereinafter mentioned, he, the Contractor, doth hereby for himself, his heirs, executors, administrators and assigns, covenant, promise and agree to and with Her Majesty the Queen, Her Heirs and Successors, in the manner following, that is to say :

1. He the Contractor shall well, truly and faithfully build, erect, construct, complete, fit up and finish in the best and most workmanlike manner in every respect, and of the best materials of their several kinds, and to the satisfaction of the Commissioner, and without any noise in the working thereof when in actual operation, the necessary furnaces, flues, boilers, tubes, valves, cocks and all and every other the machinery, apparatus and effects necessary and requisite in, about, and for the purpose of heating and ventilating the parliamentary buildings and the departmental buildings, (other than and excepting the brick work and masonry thereof, and the bricks, masons' materials for the same, and all such materials, and labor necessary for setting the boilers and furnaces,) according to the plans and specifications thereof respectively, and which plans and specifications are signed by the Contractor, and by the Commissioner, and the plans whereof so signed are deposited of record in the Department of Public Works, and the specifications whereof so signed are hereto annexed, marked A, and which said paper A, is to be construed and read as part hereof, and as embodied in and forming part of this contract.

2. The Contractor shall and will preparatory to, or in course of erection of the work embraced in this contract, find and supply at his own cost and charges, all furnaces, boilers, tubes, valves, cocks, gauges and all metal therefor, and also all necessary and proper scaffoldings and materials, tools, implements and plant of whatsoever kind or description, (other than the brick work and masonry, and materials and labor for the same as aforesaid,) for the erection, construction, and completion of the said apparatus, and of the heating and ventilation of the buildings respectively and of every part thereof, and shall also find samples or specimens of the same respectively, as the Architects or Officer in charge may require ; and further, that all materials of the said work are to be unexceptionable in quality, and shall, before being used, be inspected and

approved by the Commissioner or the Architects, or Officer in charge of the buildings respectively, and that any materials disapproved of, and rejected by the said Architects, or the Officer in charge, shall not be used in the works, and if not removed by the Contractor, when directed by the Architects, or Officer in charge, as aforesaid, then the same shall be removed by the Architects, or Officer in charge, as aforesaid, to such place as they may deem proper, at the cost and charge and risk of the Contractor: but any such inspection, and any approval of materials shall not in any wise subject, or make liable Her Majesty to pay the Contractor for the said materials so approved, or any portion thereof, nor prevent the rejection afterwards of any portion thereof, which may prove, or turn out at any time before the final completion of this contract, to be unsound, or unfit or improper to be, or to have been, used in the work, nor shall such inspection be considered as a waiver of objection to the work, or any part thereof, on the account of unsoundness or imperfection of the material used. And that all boilers, valves, and gauges and other materials and appliances shall be provided by the Contractor, to the satisfaction and approval of such one of the members of the « Board of Steamboat Inspection, » as shall be agreed upon between the Contractor and the Commissioner.

3. The Contractor shall and will perform and execute the said work under the superintendence of the Architects, or Officer in charge, and to the satisfaction of the Commissioner, and the Contractor shall commence and proceed with the same in such order, and with such rate of progress from time to time, as the Commissioner, or the Architects, or Officer in charge, may direct. And the same respectively shall be fully, thoroughly and entirely completed in their several particulars, and to the satisfaction in all respects of the Commissioner, and of the Architects, or Officer in charge thereof, on or before the first day of April, which will be in the year of our Lord, one thousand, eight hundred and sixty-two, time being of the essence of the contract; and further, that in failure of completion as aforesaid, at the period hereinbefore especially limited for the completion thereof, the Contractor shall forfeit all right, claim or demand to the money, or per centage hereinafter agreed to be retained by the Commissioner, and any and every part thereof, as also to any moneys whatever, which may be, at the time of the failure of the completion as aforesaid due or owing to the Contractor; and that the Contractor shall also pay or cause to be paid to Her Majesty, as liquidated damages and not by way of fine or penalty, the sum of two hundred dollars for each

and every week, and the fractional part of such sum for every part of a week, for which the work within this contract, or any portion thereof, may remain incomplete, or for which the certificate of the Architects in charge of the completion of the said work, or any part thereof, may be withheld, and the Commissioner may deduct and retain in his hands such sums as may become due as liquidated damages, from any sum of money then due or payable, or to fall or become due or payable thereafter to the Contractor. And further, that notwithstanding the superintendence of the Architects, or Officer in charge, and the necessity for the approval of the Commissioner, or Architects or Officer in charge, of the materials, workmanship and work, and any approval or disapproval, the same shall not at any time relieve or discharge the Contractor from his liability to perform this contract according to the terms thereof, and in all respects in the most proper and efficient manner.

4. Every hall, lobby, corridor, passage, staircase, and place other than a room, throughout the parliamentary buildings and the departmental buildings respectively, is to be heated, and kept, (if so required), at the temperature of seventy-five degrees Fahrenheit, and the chambers of the Legislative Council, and of the Legislative Assembly in the parliamentary buildings, and the library, and all rooms, offices, water closets, lavatories and apartments of any nature whatever in the parliamentary buildings, and the departmental buildings, respectively, are to be heated and kept (if so required) at the temperature of sixty-five degrees Fahrenheit, and proper stop-cocks and registers shall be placed so as to regulate every department and section of the said buildings respectively.

5. And whereas the boiler, furnaces, flues, chimneys and air ducts are to be erected by the Government, therefore, the Contractor is, and shall be, responsible for the convenience of the arrangements in the erection of the same respectively, for the said heating and ventilation of the buildings respectively, and for the security and efficiency of the work to be performed as aforesaid, for the purpose of receiving the machinery and apparatus of the Contractor herein, and all damage which may at any time, and from time to time, during the existence of this contract be done, or which may arise or happen, and from whatever cause to any portion of the works, included in the contracts respectively for the erection and construction of the buildings respectively, shall be rectified at the cost of the Contractor, (party hereto of the first part,) and according to the original plans and designs thereof, as embraced in the said

contracts respectively, and under the superintendence of the Architects, or Officers in charge of the buildings respectively, and to the satisfaction of the Commissioner.

6. That whenever, and so often as it may be necessary for the Contractor to coöperate with the Contractors for the erection and building of the buildings respectively, or any or either of them, the Contractor shall diligently, and under the directions of the Architects or Officer in charge, perform all such works as shall be requisite and proper on the part of the Contractor herein for such coöperation, and for securing and placing in proper position, the machinery and apparatus necessary in and hereby contracted to be constructed and erected for the heating and ventilation of the aforesaid buildings respectively, in a proper and secure mode, and to prevent the possibility of any accident by fire therefrom, without any extra charge therefor, and shall be bound in all things to conform to the direction of the Commissioner, or the Architects or Officer in charge, touching such coöperation and work.

7. The care of the works, included under this contract, together with whatever machinery or apparatus appertains or belongs thereto, shall be entirely at the charge and risk of the Contractor, who shall be liable and responsible for any and all loss, damage, detriment and injury that may arise, or be sustained both on this contract and the building contracts respectively, in so far as they may be effected by the execution, or delay or neglect in the execution of the works of this contract during the progress of the works, and until the same shall be completed and certified as such, by the Architects or Officer in charge, and be received and taken by the Commissioner as complete ; and the Contractor shall also repair, replace and amend any work, materials and apparatus, whether under this contract or the building contracts, (as to the latter, on the contingency of non-execution, or delay aforesaid, by the Contractor herein,) and that all per centage, drawbacks, reserves, deductions, or other funds retained by the Commissioner on behalf of Her Majesty, shall, in the event of any such loss, damage, detriment or injury be applied by the Commissioner, so far as may be necessary for the reconstruction, amendment, restoration and repairs of the work, materials, machinery or apparatus, provided that the Contractor shall not be liable, under this clause, in respect of any loss, damage, or detriment or injury which may arise to the works, machinery or apparatus comprised in, or contemplated by this contract, from the acts or neglect of the Contractors under the building contracts.

8. On failure of the Contractor to complete the works herein contracted for, at the period of time hereinbefore mentioned, the Contractor shall be liable for, and shall pay or cause to be paid to Her Majesty, all per centage, salaries, and wages which shall be or become due to the Architects, or Officer in charge, or subordinate person, or persons superintending the work on behalf of the Commissioner, from the period so hereinbefore named for the completion of the works, up to, and until the said works shall actually be completed and received; and the Commissioner may deduct and retain in his hands, out of the per centage hereinafter mentioned, or out of any moneys which may otherwise at any time become or fall due to the Contractor, all such sum and sums of money as shall have been so incurred, defrayed or expended by the Commissioner for such purpose, or the Commissioner may recover the same from the Contractor, in an action in the name of Her Majesty as moneys paid for, and on account of the Contractor.

9. If it shall at any time appear to the Commissioner that the establishment, or the rate of progress at, in, and upon the said work embraced in this contract, or of any part thereof, or of any work or matter incident to the same, or in any way connected therewith, are not (having due reference to the sufficiently advanced state of the buildings themselves, to enable the Contractor to proceed with the apparatus,) satisfactory, or such as to ensure the completion of the same within the time hereinbefore mentioned, or on failure, or breach by the Contractor, of any matter or thing herein contained, on the part of the Contractor to be done or performed, or if the Contractor shall at any time or times, neglect or refuse to carry on this contract, or any part of it, or to supply requisite and proper scaffoldings, tools, implements or plant and materials, or is unable to carry on the same, then, and in any of such cases, the Commissioner may forthwith, after having given three days notice to the Contractor of his intention so to do, and without any process or suit at law, or other legal proceeding of any kind whatever, or without its being necessary to place the Contractor *en demeure*, either absolutely take the work, or any part thereof, out of the hands of the Contractor, and relet the same without the necessity of previous advertisement, or employ additional workmen and provide materials, tools, implements and all other things requisite for the completion and performance of the Contract at the expense of the Contractor; and the Contractor shall, in either case, be liable for all damages and extra costs and expenditure, which may be incurred by reason thereof; and if such damages, extra costs and ex-

penditure, exceed in the whole the sum of sixty-one thousand, two hundred and eighty-five dollars, then Her Majesty may recover of, and from the Contractor, the balance or excess over and beyond the last mentioned sum, provided that the Contractor herein shall have the right to carry on the work of the contract at all times and periods, so that the same does not interfere with, or impede the Contractors or their Officers, workmen or servants under the building contract.

10. If any overseer, mechanic or workman employed on or about the work or any portion thereof, be incompetent to perform the work or duties required of him, or give just cause of complaint, the Contractor shall immediately, upon the application of the Architects or Officer in charge, dismiss such person or persons forthwith from the works, and he shall not again be employed thereon, without the written consent of the Architects or Officer in charge; and should the Contractor continue to employ such overseer, mechanic or workman, the Contractor shall pay to Her Majesty, Her Heirs and Successors, the sum of twenty dollars, as liquidated damages, and not of fine or penalty, for each and every day during which such overseer, mechanic or workman shall be employed on the works, after such application for his dismissal as aforesaid, and the Commissioner shall have the same power of retaining such sums as may become due to Her Majesty under this clause, or of enforcing payment thereof, as are given and expressed in the eighth clause of this contract.

11. That the Contractor shall not in any way, directly or indirectly, sell, dispose of or relet, assign, transfer or sublet to any person or persons whomsoever, either entirely or partially, and jointly with himself or in any other manner or way howsoever, this contract or any part thereof, or any portion of the work embraced herein or to be performed hereunder, or which, without being distinctly and specially mentioned herein, may yet be rendered necessary for the full and proper completion of the contract.

11a. In all cases of defective description or delineation, in either the drawings hereinbefore referred to, or the specification hereunto annexed, the explanation and interpretation given by the Commissioner, shall be received and shall be final, binding and conclusive upon the Contractor; and wherever neither the drawings, plans or specifications contain any notice of minor parts, the intention to include which is nevertheless clearly to be inferred, and which minor and detail parts are common, usual and proper in workmanship of this character, and which are obviously necessary to the due completion or stability of the work, all such



works are to be found, provided and fixed by the Contractor and at his expense and cost, and are to be considered to be included in his contract, it being the intention of this contract that all such work of every kind as may be necessary for completely finishing the work proposed, in the best and most workmanlike manner, and for the rectification of any failure from whatever cause arising, and the well maintaining, sustaining and supporting the whole of the works, as well as any and whatever change, alteration and addition that may be made thereon, so that the whole may remain sound and firm, and that all such minor parts and details are implied in the plans, drawings and specifications, and in this contract, although the same are not therein and herein specifically expressed.

12. That if any change, alteration or addition, either in the position or details of the works embraced in this contract, or in any of the materials therefor, shall be required by the Commissioner, the Contractor will make such change, alteration or addition; and if such change, alteration or addition shall entail extra expense on the Contractor, either in labor or materials, the same shall be allowed to the Contractor; or should it be a saving to the Contractor in either labor or materials, the same shall be deducted from the amount of this contract, and in either case the amount is to be determined by the estimate made by the Commissioner, his Architects or Officer in charge; but no such change or alteration, whatever may be the extent or quality thereof, or at whatever time the same may be required to be made pending this contract, shall in any wise have the effect of suspending, superseding, annulling or rescinding this contract, which shall continue to subsist, notwithstanding any such change, alteration or addition, and every such change, alteration or addition shall be performed and made by the Contractor, under and subject to the conditions, stipulations and covenants herein expressed, as if such change, alteration or addition had been expressed, and specified in the terms of this contract: and should the Contractor be required by the Commissioner, to do any work or furnish any materials for which there is not any price specified in this contract, the same shall be paid for at the estimated value thereof of the Commissioner; but no change, alteration or addition as aforesaid whatever, and no extra work whatever, shall be done without the written authority of the Commissioner; given prior to the execution of the work, nor will any allowance or payment whatever, be made for the same in case it should be done without authority. Provided that any such change shall not affect the proper working of the apparatus,—and if, in the opinion of the Contractor, such change will tend to affect the proper work-

ing of the apparatus, the Contractor shall give immediate notice thereof to the Commissioner.

13. That any notice, or other paper connected with this contract, which may be required or desirable on the part of Her Majesty, may be served on the Contractor, either at his usual domicile, or at his usual place of business, at the city of Ottawa, by being left at the post office; and any notice, or other paper so addressed and left at such post office, shall to all intents and purposes be considered legally served.

14. If any difference of opinion between the Contractor and the Architects, or Officer in charge, arise as to the construction to be put upon any part of the specifications or plans, the same shall be determined by the Commissioner alone, and such determination shall be final and conclusive, and binding upon the Contractor.

15. The Contractor is, and shall be responsible to Her Majesty for the due and efficient, and (when in actual operation,) the noiseless working of the machinery and apparatus herein mentioned, and for its capability in the heating and ventilation of the buildings respectively, for the period of ten years from the completion of this contract. Provided that, during the period of ten years, the Contractor shall have full liberty of access at all times to the buildings respectively, to test and observe the efficiency of the machinery and apparatus; and he is, and shall also be responsible to Her Majesty for all sum and sums of money as may be paid or expended by the Commissioner, or on behalf of Her Majesty, in the repairs, (reasonable wear and tear being allowed,) reconstruction, or amendment of the machinery or apparatus aforesaid, or otherwise arising from the insufficiency or inefficiency of the same for the purposes aforesaid. Provided that the Contractor shall have the nomination, approval and control (subject to the concurrent approval of the Commissioner,) of all engineers and servants employed in the regulation, management and direction of the said machinery and apparatus, and the heating and ventilation of the buildings respectively.

16. In the event of any difference or dispute between the Contractor and Architects, or Officer in charge, in respect to the performance by the Contractor of the duties required by this contract or connected therewith, the same shall be referred to the Chief Engineer of the Department of Public Works for his final arbitration and award, subject however to the approval thereof of the Commissioner.

And the Contractor and Her Majesty the Queen, do, and each of them doth hereby further mutually covenant, promise and agree, the one with

the other of them, the Contractor for himself, his heirs, executors, administrators and assignees, and Her Majesty for Herself, Her Heirs, and Successors, in manner following, that is to say:

1. Payment of any sums of money which may be made to the Contractor by Her Majesty under this contract, will be so made according to the provisions of the Consolidated Statutes of Canada, chapter twenty-eight, section eighteen, and within ten days after an estimate of the Architects, or Officer in charge, shall have been received by the Commissioner, specifying the amount of work done during the month then ending; but nevertheless the Commissioner, on behalf of Her Majesty may withhold and retain from the Contractor thirty per cent. out of the estimates, until the perfect completion of the work, and the acceptance of the same by the Commissioner,—which thirty per cent, so withheld and retained, the Commissioner may continue to withhold, until the whole of the works shall have been tested for thirty months, from the date of the actual completion of the contract, and until the lapse of such period; and if at the expiration of the said thirty months, it shall be found that the whole of the work and machinery and apparatus is perfect, sound and substantial, and that the system of heating and ventilation throughout the buildings respectively, is in successful operation, the Architects, or Officer in charge, shall give his final certificate—Provided that the Commissioner may at any time, and from time to time, advance and pay to the Contractor any portion of the per centage hereinbefore mentioned, prior to the expiration of the period of thirty months aforesaid.

2. That the Commissioner on behalf of Her Majesty, may make payments or advances on materials, implements or tools of any description, procured for the works, or used, or intended to be used about the same, in such cases and upon such terms and conditions as to the Commissioner may seem proper; and that whenever any advance or payment shall be made to the Contractor upon any tools, implements or materials of any description, the same, or such as upon which such advance or payment shall be made, shall thenceforward be vested in and held as collateral security by Her Majesty, Her Heirs, and Successors, for the due fulfilment by the Contractor of this contract: it being however well understood, that all such tools, implements or materials of any kind are to remain at the risk of the Contractor, who shall be responsible for the same, unless and until the same are, upon the completion of the contract, finally accepted as part of the work by the Commissioner; but the Contractor shall not exercise any act of ownership, or control whatever, over any tools, imple-

ments or materials, upon which any advance or payment has been so made, without the permission in writing of the Commissioner.

3. That in case the amount, heretofore voted by the Parliament of Canada, for the construction and erection of the buildings respectively, be at any time expended, previously to the completion of the work embraced in this contract, the Contractor may or may not, at his option, on receipt of a notice in writing from the Commissioner of such expenditure having occurred, stop the work; but in such case, the Contractor shall not be entitled to any further payment for work done, or materials supplied after the service of such notice, unless and until the necessary funds shall be voted by Parliament; nor shall the Contractor have any claim for compensation, or damages, for the suspension of work accruing on such notice as aforesaid, or suspension of payment.

4. The buildings respectively are to have, and be provided by the Commissioner with double external doors, and with double external windows, throughout the same.

5. In this contract the words « Her Majesty, » shall mean Her Majesty Queen Victoria, Her Heirs and Successors.

The words « The Commissioner, » shall mean the Commissioner of Public Works of the Province of Canada for the time being.

The words « The Contractor, » shall mean Charles Garth, his heirs, executors, administrators and assignees.

The words « the buildings, » shall mean the buildings and erections as designed by the Architects thereof, and under the designation of « the parliamentary buildings, » contracted for by one Thomas McGreevy with Her Majesty the Queen, in a certain deed of covenant bearing date the seventh day of December, in the year one thousand, eight hundred and fifty-nine, and the plans, specifications and documents thereunto annexed, and also the buildings and erections as designed by the Architects thereof, and under the designation of « the departmental buildings, » contracted for by Messieurs Jones, Haycock and Company with Her Majesty the Queen in a certain deed of covenant, bearing date the seventh day of December, in the year one thousand, eight hundred and fifty-nine, and the plans, specifications and documents thereunto annexed; and the words « the parliamentary buildings, » and « the departmental buildings, » shall mean the buildings respectively, in the deeds of covenant firstly and secondly above mentioned; and the words « building contracts, » shall mean the said deeds of covenant, respectively above mentioned.

The words « Architects » or « Architects in charge, » shall in so far as regards « the parliamentary buildings, » mean Messieurs Fuller and Jones, of the city of Ottawa, Architects, or such other person or persons as may be appointed by the Commissioner to act as the Architects in the room and stead of the said Messieurs Fuller and Jones ; and shall in so far as regards « the departmental buildings, » mean Messieurs Stent and Laver, of the city of Ottawa, Architects, or such other person or persons as may be appointed by the Commissioner, to act as the Architects, in the room and stead of the said Messieurs Stent and Laver.

The words « Officer in charge, » shall mean the Clerk of works, or such other Officer or person as may be by note in writing to the Contractor, mentioned as the Officer in charge.

The construction of the words given in this clause, shall not control any more extended construction which may be given to any of such words throughout this contract.

IN WITNESS WHEREOF, the said the Contractor hath hereunto set his hand and affixed his seal, and the Honorable John Rose, Commissioner of Public Works of the Province of Canada, for the time being, acting herein on behalf of Her Majesty, hath set his hand and seal the day and year first above written.

(Signed,) CHARLES GARTH,  
“ JOHN ROSE, Commissioner,  
Public Works.  
“ T. TRUDEAU, Secretary.

SIGNED, SEALED AND DELIVERED, by Charles Garth and the Honorable John Rose.

In the presence of

(Signed,) H. BERNARD, Chief Clerk,  
Department Attorney General, U. C.

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# SPECIFICATION.

## SCHEDULE A.

Referred to in the annexed deed, and embodied in and forming part thereof.

(Signed,) JOHN ROSE, Commissioner.  
“ CHARLES GARTH.  
“ T. TRUDEAU, Secretary.

Witness,  
(Signed,) H. BERNARD.

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## DEPARTMENTAL BUILDINGS,

OTTAWA, C. W.

## RIGHT AND LEFT HAND BLOCKS.

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### WARMING AND VENTILATING.

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#### BOILER HOUSES.

Provide and fix four cornish boilers 20 feet long, 5 feet diameter, with inside furnaces and flues, 3 feet diameter. The outside, or shell of boilers, to be  $\frac{1}{4}$ ths thick, the furnace and flue to be  $\frac{3}{8}$  thick; the Iron to be Thornecroft's BB best refined plates, the ends of the boilers to be  $\frac{3}{8}$  thick, of the best Low Moor iron, one steam drum on each boiler, 2 feet diameter, and 2 $\frac{1}{2}$  feet high.

Each boiler will be provided with one lever safety valve, one lock up safety valve, one glass tube water guage, three guage cocks, one Ashcroft's, or other approved steam guage, one syphon mercury guage, one brass blow-off cock for cleaning out boilers, one 4 inch steam valve, one return water-check valve, one feed water-check valve, with the

necessary cast iron steam and waste steam pipes, also, blow-off pipes for cleaning out boilers, wrought iron feed pipes from steam engines to boilers, and everything that the law regulating steam boilers on board of steamers requires.

The two steam engines will be of the best description of the horizontal kind, complete in every respect,—which engines will work two hydraulic force and lift pumps, of the best possible description, capable of throwing, not less than 250 gallons of water per minute, into the tanks in the towers from the boiler houses. Two wrought-iron condensed water tanks, to hold 700 gallons, 7 feet long, 4 feet wide and 4 feet deep, or if circular, of an equal capacity, with 2 inch wrought-iron feed pipes, from pumps of steam engines, and supply pipes to steam boilers.

Two inch wrought-iron rising mains from the steam engine pumps to the entrance of the buildings nearest the boiler houses, to join the lead pipe, as provided for in the plumber's specification.

#### BASEMENTS.

Provide 12 inch diameter, galvanized iron pipes, fixed to convey the warmed air from the vaults to the flues, on the opposite sides of the corridors. In vaults, as shewn on plans, will be fitted up main steam pipes of iron, varying from 4 to 2 inch ; these pipes are carried just under the level of the level of the basement floors ; over these, in the same vaults, will be placed a sufficient number of steam coils, made of wrought iron, steam pipes averaging 1 inch diameter, capable of generating the required quantity of heat to warm all the rooms and corridors in the buildings.

All the rooms in the basements (marked on the original plans to be occupied,) will have steam pipes carried all round the inside of the external walls in the base or skirtings.

#### GROUND FLOORS.

Provide and fix 100 registers for rooms.

Provide and fix 15 registers for passages.

Provide and fix 24 ventilators for passages.

#### FIRST FLOORS.

Provide and fix 105 registers for rooms.

Provide and fix 13 registers for passages.

Provide and fix 26 ventilators for passages.

## A T T I C S .

Provide and fix four steam coils in ventilating shafts, with the necessary supply pipes from the boilers (for drawing off the vitiated air.)

Provide and fix all other materials and labor that may be necessary for completely finishing the before-mentioned work, with the exception of all bricklayers', joiners', masons' and excavators' works, and all materials and labor required for setting the boilers, building boiler houses, warm air vaults, cold air and ventilating ducts and flues, chimneys, smoke flues, extracting shafts, drains and recesses in walls for steam pipes, warm air pipes, &c.; all the foregoing subject to general conditions as arranged in contract.

N. B.—The ventilators for the rooms are not included in this specification, being provided for in the Architects' specification.

(For details, see plans N°. 1 to 16.)

Examined and approved.

(Signed,) STENT & LAVER,  
Architects.

November 6th, 1860.

(Signed,) CHARLES GARTH, Steam Fitter.  
“ JOHN ROSE, Commissioner.  
“ T. TRUDEAU, Secretary.

Witness,

H. BERNARD.

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# SPECIFICATION

FOR DEPARTMENTAL ARCHITECTS, OR CONTRACTORS.

All warm air and ventilating flues to be built perfectly smooth inside, and whitened, free from elbows and sharp angles of any kind, and to be of not less than the following dimensions, viz :

## WARM AIR FLUES.

Ground floors, rooms . . . . .	9 x 14
Ground floors, corridors . . . . .	9 x 18
First floors, rooms . . . . .	6 x 18
First floors, corridors . . . . .	6 x 18

## REGISTER OPENINGS FOR DITTO.

Ground floors, rooms . . . . .	9½ x 14½
Ground floors, corridors . . . . .	12½ x 19½
First floors, rooms . . . . .	8½ x 18½
First floors, corridors . . . . .	8½ x 18½

## VENTILATING FLUES.

Ground and first floors, rooms . . . . .	5 x 14
Ground and first floors, corridors . . . . .	5 x 18
Water closets, main flues . . . . .	9 x 27
Or three flues . . . . .	9 x 9

## VENTILATOR OPENINGS.

Ground and first floors, rooms . . . . .	6½ x 14½
Ground and first floors, corridors . . . . .	6½ x 18½

All cold air ducts, warm air vaults and extracting shafts to be built smooth inside. The warm air vaults and extracting shafts to be whitened inside.

# SCHEDULE

OF PRICES FOR WARMING AND VENTILATION OF DEPARTMENTAL BUILDINGS, OTTAWA.

	\$	Cts.
Cornish steam-boilers, 20 feet long, 5 feet diameter, with 3 feet flues .....	1200	00
Horizontal steam-engines, with pumps complete..... do .....	1000	00
4-inch cast-iron steam-pipes.....per foot....	1	00
2-inch wrought-iron do do .....	0	50
6-inch cast-iron do do .....	2	00
4-inch globe-valves .....	30	00
4-inch check-valves. ....	30	00
Feed check-valves.....	20	00
Alarm or glass water-gauges.....	40	00
Brass guage-cocks .....	4	00
Blow-off cocks, for boilers.....	16	00
Ashcroft's Steam-gauges.....	40	00
Syphon mercury-gauges.....	10	00
4-inch stop steam valves.....	30	00
Lever safety-valves.....	20	00
Lock-up do do .....	30	00
Wrought-iron condensed water-tanks at 10 cents per lb. two. ....	216	00
2-inch brass globe-valves.....each. ....	10	00
2-inch stop-cocks.....	10	00
Tinned galvanized-iron warm-air pipe....per feet....	1	00
1-inch wrought steam-tube .....	0	20
2-inch check-valves .....	10	00
1-inch do do .....	4	00
1-inch globe do .....	4	00
Tees, knees, branches, &c., assorted.....	0	75
12 x 19 registers .....	7	00
14 x 9 do .....	5	00
18 x 8 do .....	5	00
Foreman fitter.....per day....	3	00
Steam-fitters .....	2	00
Labourers.....	1	00

The foregoing scale of rates to be allowed in valuing for progress estimates, as well as for alterations, additions, or works dispensed with, and also for extras. To be measured and calculated solely by the Architects or the Clerk of the Works.

Examined and approved.

(Signed,) STENT & LAVER,  
Architects.

November 6th, 1860.

(Signed,) CHARLES GARTH, Steam-Fitter.  
" JOHN ROSE, Commissioner.  
" T. TRUDEAU, Secretary.

Witness,

H. BERNARD.

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## SPECIFICATION.

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### PARLIAMENTARY BUILDINGS, OTTAWA, C. W.

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#### WARMING AND VENTILATING.

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##### BOILER HOUSE.

Provide and fix six cornish boilers 20 feet long, 5 feet diameter, with inside furnaces and flues 3 feet diameter. The outside or shell of boilers to be  $\frac{1}{4}$ th in. thick, the furnace and flue to be  $\frac{3}{8}$ ths in. thick. The iron to be Thornecroft's BB best refined plates, the ends of boilers to be  $\frac{3}{8}$  in. thick of the best Low Moor iron, one steam drum on each boiler 2 feet diameter and  $2\frac{1}{4}$  feet high. Each boiler will be provided with one lever safety-valve, one lock-up safety-valve, one glass tube water-gauge, three gauge-cocks, one Ashcroft's or other improved steam-gauge, one syphon mercury-gauge, one brass blow-off cock for cleaning out boilers, one 4-inch steam-valve, one returned-water check-valve, one feed-water check-valve, with the necessary cast-iron steam and waste steam-pipes; also, blow-off pipes for cleaning out boilers, wrought-iron feed-pipes, from steam-engine to boilers, and everything that the law regulating steam-boilers on board of steam boats, requires.

The steam-engine will be of the best description of the horizontal kind, complete in every respect, which engine will work two hydraulic force and lift pumps, of the best possible description, capable of throwing not less than 250 gallons of water per minute to the tanks in the towers from the boiler-house.

One wrought-iron condensed water-tank, to hold 2000 gallons, say 14 feet long and 6 feet wide, and 4 feet deep, or, if circular, of equal capacity, with 2-inch wrought-iron feed-pipe,

from pump of steam-engine, and supply-pipe to the steam-boilers, 2-inch wrought-iron rising-mains from the steam-engine pump, to be furnished and laid under the basement-floor, to join to the 1½-inch lead pipe that descends from the cisterns to the basement, as provided for in the plumber's specification.

### B A S E M E N T .

Provide and fix 12-inch diameter galvanized and tinned iron pipes, fixed to convey the warmed air from the vaults to the flues on the opposite side of the corridor. In the vaults under the Legislative Assembly, Legislative Council, library, picture room (or gallery,) smoking-rooms, and all the rooms of the main building, will be fitted up main steam-pipes of iron, varying from 4 to 2 inches ; these pipes are carried just under the level of the basement floor. Over these, in the same vaults, there will be placed a sufficient number of horizontal steam coils, made of wrought-iron steam-pipe, of an average diameter, capable of generating the required quantity of heat, to warm all the rooms in the centre part of the building.

All the basement-rooms (marked in the original plan to be occupied) will have steam-pipes carried all round the inside of the external walls on the base or skirting. The coils will be arranged in sections or nests, so that one portion of the building can be warmed without the other.

### B A S E M E N T .

70 Ventilators.

### G R O U N D F L O O R .

#### Library.

Five large circular registers on the floor of the library, connected with the vault underneath containing the steam-coils, to convey up the warm air ; sixteen ventilators on the walls, near the floor of room, to draw off the vitiated air.

#### Rooms round Library.

Ten registers for warm air, connected with vault under library containing the steam-coils ; eight ventilators on the walls, near the floor of the rooms. Eight small ventilators, for water-closets.

#### Smoking-Rooms.

Four registers for warm air connected with vault, twelve ventilators, near the floor and ceilings.

|                                                                                                                                     |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Five large registers for warm air, connected with vault.<br>Four large ventilators, near the floor and ceiling.                     | Picture Gallery.                              |
| Six registers.<br>Twelve ventilators.                                                                                               | Governor General's and Chaplain's room.       |
| Two registers for warm air, connected with vault.<br>Four ventilators near the floor and ceiling.                                   | Corridor between Picture Gallery and Library. |
| Two registers for warm air connected with vault.<br>Four ventilators, near the floor and ceiling.                                   | Corridor round the Picture Gallery.           |
| Six registers for warm air.<br>Eight ventilators, near the floor and ceiling.                                                       | Two Reading rooms and two Secretary Do.       |
| Two-steam coils recessed in walls, with cast-iron screens in front.<br>Four ventilators.                                            | Two Speaker's entrances.                      |
| Two-steam coils recessed in walls, with cast-iron screens in front.<br>Four ventilators.                                            | Two Speaker's offices.                        |
| Two steam-coils and screens.<br>Four ventilators near floor and ceiling.<br>Two ventilators for water-closets.                      | Two Dressing Rooms and Water-Closets.         |
| Two steam-coils and screens.<br>Two registers for warm air.                                                                         | Two Reporters' entrance stairs.               |
| Two registers for warm air.<br>Four ventilators, near floor and ceiling.                                                            | Two Lavatories.                               |
| Two registers for warm air.<br>Twelve small registers, for ventilation of closets and urinals.<br>Four large ventilators for rooms. | Two Water-Closets and urinal rooms.           |
| Four registers for warm air.<br>Four ventilators near floor and ceiling.                                                            | Two Ward-robcs.                               |
| Two registers for warm air.<br>Four ventilators, near floor and ceiling.                                                            | Two Messengers' rooms.                        |

**Legislative Assembly and Council.** Ornamental cast-iron perforated risers, for front of members' and speaker's platforms, for the warm air from vault below.  
Perforated iron grating round the front of gallery, and along the back near the outside walls for ventilation. (See Plans.)

**Corridors round Assembly and Council rooms.** Twelve registers for warm air.  
Twenty ventilators, near floor and ceiling.

**Members' Lobby.** Four registers for warm air.  
Four large ventilators near floor and ceiling.

**Public Hall.** Two large square registers, under the windows on each side of principal door.  
Four ventilators.

**Two Public Stair-cases.** Three registers for warm air.  
Four ventilators.

**Two Telegraph Offices.** Two registers for warm air.  
Four ventilators.

**Two Post-Offices.** Four registers for warm air.  
Eight ventilators.

**Two Members' entrances.** Two steam-coils.  
Four ventilators.

**Two Chief Clerks of House.** Four ventilators.  
Two registers for warm air.

#### LEFT WING.

**One Dressing-room.** One steam-coil and screen.  
Two ventilators.

**One Assistant Clerk.** One steam-coil and screen.  
Two ventilators.

**One Messenger.** One steam-coil and screen.  
Two ventilators.

**One Members' entrance.** One steam-coil.  
Two registers.

**Two Committee-rooms.** Two steam-coils and screens.  
Four ventilators.

|                                                     |                                        |
|-----------------------------------------------------|----------------------------------------|
| One steam-coil and screen.<br>Two ventilators.      | Corner Com-<br>mittee-room.            |
| Three steam-coils and screens.<br>Four ventilators. | Sergeant-at-<br>Arms' Apart-<br>ments. |
| One coil and screen.<br>Six ventilators.            | Lavatory and<br>Water-Closets.         |
| One coil and screen.<br>Two ventilators.            | Routine and<br>Records.                |
| One coil and screen.<br>Two ventilators.            | Journals.                              |
| One coil and screen.<br>Two ventilators.            | Junior Clerk.                          |
| One coil and screen.<br>Two ventilators.            | Extra Writers.                         |
| One coil and screen.<br>Two ventilators.            | Chief Office<br>Clerk.                 |
| One coil.<br>Two ventilators.                       | Stationery.                            |
| One coil and screen.<br>Two ventilators.            | Messengers.                            |
| Seven coils and screens.<br>Six large ventilators.  | Corridor round<br>Open Court.          |

## RIGHT WING.

|                                                |                     |
|------------------------------------------------|---------------------|
| One steam-coil and screen.<br>Two ventilators. | Dressing-room.      |
| One steam-coil and screen.<br>Two ventilators. | Assistant<br>Clerk. |
| One steam-coil and screen.<br>Two ventilators. | Junior Clerk.       |
| One steam-coil and screen.<br>Two ventilators. | Messengers.         |



|                                     |                                                            |
|-------------------------------------|------------------------------------------------------------|
| Members' entrance.                  | One steam-coil in vault.<br>Two registers.                 |
| English Journal.                    | One steam-coil and screen.<br>Two ventilators.             |
| French Journal.                     | One steam-coil and screen.<br>Two ventilators.             |
| Corner Committee-Room.              | One steam-coil and screen.<br>Two ventilators.             |
| Usher Black Rod Apartments.         | Three steam-coils and screens.<br>Four ventilators.        |
| Lavatory and Water-Closets          | One steam-coil and screen.<br>Six ventilators.             |
| French Translators' and small room. | Two steam-coils and screens.<br>Two ventilators each room. |
| Deputy Assistant Clerk.             | One steam-coil and screen.<br>Two ventilators.             |
| Assistant Clerk, and Messenger      | Two steam-coils and screens.<br>Four ventilators.          |
| Stationery.                         | One steam-coil and screen.<br>Two ventilators.             |
| Council Conference room.            | Two steam-coils and screens.<br>Two ventilators.           |
| Corridor round Open Court.          | Seven steam-coils and screens.<br>Six large ventilators.   |

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## FIRST FLOOR

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### RIGHT WING.

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| Messengers.                | One steam-coil and screen.<br>Two ventilators.   |
| Conference Committee-room. | Two steam-coils and screens.<br>Two ventilators. |

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| One steam-coil and screen.<br>Two ventilators.           | Law Clerk.                          |
| One steam-coil and screen.<br>Two ventilators.           | English<br>Translator.              |
| Two steam-coils and screens.<br>Four ventilators.        | Two Com-<br>mittee-rooms.           |
| One steam-coil and screen.<br>Two ventilators.           | Corner Com-<br>mittee-room.         |
| One steam-coil and screen.<br>Six ventilators.           | Lavatory and<br>Water-Closets.      |
| Three steam-coils and screens.<br>Six ventilators.       | Usher Black<br>Rod Apart-<br>ments. |
| One steam-coil and screen.<br>Two ventilators.           | Corner Com-<br>mittee-room.         |
| Four steam-coils and screens.<br>Eight ventilators.      | Four Com-<br>mittee-rooms.          |
| One steam-coil and screen.<br>Two ventilators.           | Corner Com-<br>mittee-room.         |
| One steam-coil and screen.<br>Two ventilators.           | End Commit-<br>tee-room.            |
| Seven steam-coils and screens.<br>Six large ventilators. | Corridors<br>round open<br>Court.   |

LEFT WING.

|                                                    |                              |
|----------------------------------------------------|------------------------------|
| One steam-coil and screen.<br>Two ventilators.     | English Trans-<br>lator.     |
| One steam-coil and screen.<br>Two ventilators.     | Law Clerk.                   |
| Three steam-coils and screens.<br>Six ventilators. | Three French<br>Translators. |
| One steam-coil and screen.<br>Two ventilators.     | Small Commit-<br>tee-room.   |

|                                   |                                                          |
|-----------------------------------|----------------------------------------------------------|
| Corner Committee-room.            | One steam-coil and screen.<br>Two ventilators.           |
| Sergeant at Arm's Apartments.     | Three steam-coils and screens.<br>Six ventilators.       |
| Lavatory and Water-Closets.       | One steam-coil and screen.<br>Six ventilators.           |
| Corner Committee-Room.            | One steam-coil and screen.<br>Two ventilators.           |
| French Committee Chief Clerk.     | One steam-coil and screen.<br>Two ventilators.           |
| French Committee Assistant Clerk. | One steam-coil and screen.<br>Two ventilators.           |
| Three Committee-rooms.            | Three steam-coils and screens.<br>Six ventilators.       |
| Messenger.                        | One steam-coil and screen.<br>Two ventilators.           |
| General Committee-room.           | Two steam-coils and screens.<br>Four ventilators.        |
| Corridor round Open Court.        | Seven steam-coils and screens.<br>Six large ventilators. |
| Two Reporters' rooms.             | Two steam-coils and screens.<br>Four ventilators.        |
| Two Lavatories and Water-Closets. | Two steam-coils and screens.<br>Four ventilators.        |
| Seven rooms in Towers.            | Seven steam-coils and screens.<br>Fourteen ventilators.  |

**CENTRE COMPARTMENT.****GROUND FLOOR.**

One register for warm air.  
Two ventilators.

Private Bill  
Committee-  
room.

Two registers for warm air.  
Four ventilators.

Railway Com-  
mittee-room.

One register for warm air.  
Two ventilators.

Chief Clerk of  
Committee.

One register for warm air.  
Two ventilators.

Retiring-room.

**FIRST FLOOR.**

One register for warm air.  
Two ventilators.

Contingent  
Committee  
room.

Four registers for warm air.  
Eight ventilators.

Four Commit-  
tee rooms.

One register for warm air.  
Two ventilators.

English Trans-  
lator.

Four warm air registers.  
Four large ventilators.

Corridor Centre  
Compartment.

**ATTIC.**

Four large steam-coils with iron casings, supply-pipes and valves, from boilers, to be placed in the ventilating-towers.

Two steam-coils complete in shafts, round the smoking-room's chimneys. Two steam-coils complete in shafts, round the right and left wing chimneys.

Provide and fix all other materials and labour that may be necessary for completely finishing the before-mentioned work, with the exception of all bricklayer's, mason's, and joiner's work, and labour and materials for setting the boilers, building boiler-houses, warm-air vaults, cold-air and ventilating ducts and flues, chimneys, smoke-flues, extracting-shafts,

## SPECIFICATION.

drains and recesses in walls for steam-pipes, warm-air pipes, &c. All the foregoing subject to general conditions as arranged in contract. The iron screens to be made according to the Architects' design.

Examined,

(Signed,) FULLER & JONES,  
Architects.

November 6th, 1860.

(Signed,) CHARLES GARTH, Steam-Fitter, &c.  
" JOHN ROSE, Commissioner.  
" T. TRUDEAU, Secretary.

Witness,

H. BERNARD.

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# SCHEDULE

OF PRICES FOR WARMING AND VENTILATION OF PARLIAMENT BUILDING, OTTAWA, C. W.

|                                                                                      | \$   | cts. |
|--------------------------------------------------------------------------------------|------|------|
| Cornish steam-boilers 20 feet long, 5 feet diameter, with 3 feet flue.....each. .... | 1200 | 00   |
| Horizontal steam-engine, with pumps complete.....do .....                            | 1000 | 00   |
| Lever safety-valves .....do .....                                                    | 20   | 00   |
| Lock-up safety do .....do .....                                                      | 30   | 00   |
| 4-inch cast-iron steam-pipes .....per foot....                                       | 1    | 00   |
| 6-inch do do .....do .....                                                           | 2    | 00   |
| 4-inch globe valves .....each. ....                                                  | 30   | 00   |
| 4-inch check do .....do .....                                                        | 30   | 00   |
| Feed do do .....do .....                                                             | 20   | 00   |
| Alarm and glass water-gauges.....do .....                                            | 40   | 00   |
| Wrought-iron condensed water-tank, at 10 cents per lb. do .....                      | 394  | 00   |
| 2-inch globe valves, (brass) .....do .....                                           | 10   | 00   |
| 21-inch wrought-iron pipe.....per foot....                                           | 0    | 50   |
| Syphon mercury-gauges.....each. ....                                                 | 10   | 00   |
| 4-inch stop valves .....do .....                                                     | 30   | 00   |
| 2-inch stop cocks .....do .....                                                      | 10   | 00   |
| Tinned galvanized iron warm-air pipe.....per foot..                                  | 1    | 00   |
| Blow-off cocks .....each. ....                                                       | 16   | 00   |
| Gauge-cocks .....do .....                                                            | 4    | 00   |
| 11-inch wrought-iron steam pipe.....per foot....                                     | 0    | 20   |
| 2-inch check valves .....each. ....                                                  | 10   | 00   |
| 1-inch do do .....do .....                                                           | 4    | 00   |
| 1-inch globe do .....do .....                                                        | 4    | 00   |
| Tees, knees, branches, assorted.....do .....                                         | 0    | 75   |
| Foreman fitter.....per day....                                                       | 3    | 00   |
| Steam-fitter .....do .....                                                           | 2    | 00   |
| Labourers.....do .....                                                               | 1    | 00   |
| Ashcroft's steam gauges.....each. ....                                               | 40   | 00   |
| Perforated iron grating for risers of members' and speaker's platforms.....per foot. | 0    | 20   |
| 14 x 22-inch registers .....each. ....                                               | 10   | 00   |
| 36-inch round registers .....do .....                                                | 20   | 00   |
| 14 x 9 do do .....do .....                                                           | 5    | 00   |
| 14-inch round do .....do .....                                                       | 5    | 00   |
| 12 x 19-inch do .....do .....                                                        | 7    | 00   |
| 84-inch long perforated screens, under windows of public hall.....do .....           | 20   | 00   |
| 8 x 12-inch registers .....do .....                                                  | 4    | 00   |
| 14 x 6 do do .....do .....                                                           | 3    | 00   |
| Perforated iron grating for gallery.....per foot....                                 | 0    | 25   |

The foregoing scale of rates to be allowed in valuing for progress estimates, as well as for alterations, additions, or works dispensed with, and also for extras. To be measured and calculated solely by the Architects or the Clerk of Works.

Examined and approved,

FULLER & JONES,  
Architects.

November 6th, 1860.

(Signed,) CHARLES GARTH, Steam-Fitter, &c.  
" JOHN ROSE, Commissioner.  
" T. TRUDEAU, Secretary.

Witness,

H. BERNARD.

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**No. 43.** Copy of a report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council on the 18th December 1860.

**56588**

On a memorandum, dated 4th December, 1860, from the Honorable the Commissioner of Public Works, reporting that various important matters connected with the plans and rate of progress and the character of the works on the Public Buildings at Ottawa, have recently been brought under his consideration.

That the operations of the season being now nearly closed, it is thought a fitting time to make a full and comprehensive examination into the whole matter, as well touching the general character and progress of the works, the alterations which have been made, and any « extra work » which may have been performed ; to regulate the mode in which future advances on the progress estimates shall be made, and also to report on the general management and supervision of the works ; he therefore recommends that Mr. Page, the Chief engineer of this department, be authorized, under the immediate authority of Your Excellency, to proceed to the spot and undertake the performance of the duty referred to, and that he have full authority to obtain from the Architects, Clerk of works, and all others, such information and assistance as he may think necessary in the premises. The committee advise that authority be issued to Mr. Page, in conformity with the foregoing recommendation.

Certified,

(Signed) WM. H. LEE,  
C. E. C.

The Honorable,  
The Commissioner of Public Works.

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**No. 44.**

QUEBEC, December 10th 1860.

34890.

SIR,

The Government, on the recommendation of the Hon. the Commissioner of Public Works, has directed an enquiry to be made into matters connected with the Public Buildings, now in progress of construction at Ottawa, and intrusted to you the discharge of that duty.

A copy of the Order in Council to that effect is herewith enclosed, from which it will be seen, that your opinion of the general character and progress of the works is required, and your attention is directed to any alterations or changes that have been made in the plan of construction originally contemplated, especially where they have led to any increase or diminution of the bulk sum for which the completion of the respective buildings was undertaken.

In regard to works of this class, you are expected to adopt such measures as will satisfy yourself of the correctness of the quantities, and their absolute value.

Your opinion is also requested in regard to the expediency or otherwise of such changes as have been, from time to time, suggested by the Architects of the different buildings ; you will also consider and advise as to the simplest mode and form of preparing the monthly progress estimates.

It is further expected that you will examine, as far as circumstances will admit, the various classes of materials used or prepared for the different buildings, and also the plans of the respective structures, with a view of giving your opinion of their stability. You will also ascertain whether more or less superintendence is required to conduct the works in a satisfactory manner during the ensuing season, and report fully on these and all such other matters connected with the buildings, or their management, as may, in the course of your examination and enquiries, seem necessary to put the Government in possession of full information on the subject.

You will be put in possession of the various communications that have been received and sent by the department in reference to the works ; copies of the contracts and specifications will also be given to you. The general plans you will find in the office.

A letter on the subject of your visit to Ottawa has been addressed to the Architects of the different buildings and to the Clerk of works,

(a copy of which is enclosed) in which they have each been directed to give you access to all plans, papers, and other documents, and give you such assistance and explanations as you may consider necessary in the premises.

For any explanation you may require, in regard to the works connected with the proposed system of warming and ventilation, you are referred to Mr. Garth of Montreal.

I have the honor to be, Sir,

Your obt. Servt.

(Signed.) F. BRAUN, for Secy.

JOHN PAGE Esqr., Chief Engineer,  
Dept. of Public Works, Quebec.

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## REPORT BY JOHN PAGE,

*Chief Engineer of Public Works.*

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No. 45.

QUEBEC, April 20th, 1861.

52848.

The Secretary of Public Works,

SIR,

In compliance with instructions handed to me in December last, (a copy of which precedes this report) relative to an examination of the works connected with the Public Buildings in progress of construction at Ottawa, I immediately proceeded to that place, and took such preparatory steps for the discharge of the duty entrusted to me, as circumstances would admit.

It is, however, proper to state, that the severity of the weather not only retarded the business, but forced me to apply to the Architects and Clerk of works, for information, which, at a more favorable season, could have been personally obtained.

The information thus furnished was carefully checked where possible, and will be used in common with my own observations, without further acknowledgement, except in special cases.

It is believed, that before going into details, an outline of matters connected with the works from their commencement, will not be considered

superfluous, as it will serve to explain many questions subsequently to be brought under notice.

The first direct action which appears to have been taken by the Department, was the issuing of a notice (dated 7th May 1859), inviting Architects to compete in furnishing designs for the respective blocks of buildings, to be submitted by the first day of August following, and informing them that :

« For the most approved sets of designs for Parliament buildings, £250 will be awarded as the first premium, and £100 as the second. « For the Public Departments, £250 will be awarded as the first premium, and £100 as the second. The plans selected to become the « property of the Commissioner of Public Works.

« The above edifices are proposed to be built in a plain, substantial « style of architecture ; of coursed, hammer-dressed masonry, with « neatly pointed joints, and cut-stone quoins, window-dressings and « entablatures ;—the materials being found in the vicinity of Ottawa ; « interior walls to be of brick work.

« All information as to the sites of the buildings, their size, the « number of rooms, &c., necessary to the preparation of the plans, « can be obtained at the Office of the Department. »

Subject to this notice, 23 designs were received, 16 of which were for the Parliamentary buildings, and were submitted by 14 different competitors. The whole having been thoroughly examined, in regard to their adaptation and economy of construction, the successful competitors were as follows :

*For the Parliament Buildings.*

|                                  |                |
|----------------------------------|----------------|
| Messrs. Fuller & Jones . . . . . | First Premium, |
| Messrs. Stent & Laver . . . . .  | Second “       |

*For the Departmental Buildings.*

|                                  |                |
|----------------------------------|----------------|
| Messrs. Stent & Laver . . . . .  | First Premium, |
| Messrs. Fuller & Jones . . . . . | Second “       |

In September following, these gentlemen were instructed by the Department to make certain alterations in the plans submitted by them ; and requested to have this done, and specifications of the work prepared, by the 15th of October.

On the 8th September, public notice was given that tenders for the erection of the buildings, would be received until the first day of November following ; and that plans and specifications could be seen at Quebec, Ottawa, and Toronto, on and after the 15th October.

The time, however, was extended to the 15th day of November, when 21 tenders were received for the Parliament buildings, and 29 for the Departmental buildings; and on the 5th December, all the works connected with the former, were awarded to Thomas McGreevy, Contractor, Quebec, at the bulk sum of \$348,500, and a contract was entered into with him on the 7th December, 1859, which stipulates that the works shall be immediately commenced and proceeded with, in such a manner as to ensure their completion by the first day of July, 1862.

The works connected with the Departmental buildings were about the same time awarded to Messrs. Ralph Jones, Edward Haycock and Thomas C. Clarke; and a contract also entered into with them on the 7th December, 1859, at the bulk sum of \$278,810. The time of their completion limited to the 1st day of February, 1862.

In both cases, the contract embraces all the works represented on the plans and described in the specifications; including the fire-proofing of the basement and second floors of the different buildings.

The gentlemen who had been the successful competitors in furnishing the designs for the buildings, were on the 2d. December appointed to superintend their execution; viz, Messrs. Fuller and Jones were appointed Architects of the Parliament buildings, and Messrs. Stent & Laver Architects of the Departmental buildings, and, on the 12th of the same month, Mr. John Morris was appointed Clerk of Works.

Immediately after these arrangements were made, the contractors set about procuring the necessary materials, and the works were formally commenced on Tuesday the 20th December, in presence of the municipal authorities of Ottawa, the Architects, Deputy Commissioner, and Clerk of works, by the Honorable the Chief Commissioner of Public Works turning the first sod.

The site of the buildings is on an elevated point of land, hitherto known as the « Barrack Hill », the south side of which, for a distance of 1750 feet, forms the north side of Wellington street, one of the principal streets of the city.

The land between the brow of the hill and this street, is upwards of 29 acres in area, of an irregular shape, and varying in width from 1050 feet at the centre, to 300 feet at the west end, where it is of less height, and bounded by private property. On the east is the outlet of the Rideau Canal, running in an oblique northerly direction, near the foot of the precipice which forms the eastern side of the hill.

The ground varies from 135 to 162 feet over the low water level of the

Ottawa river, which flows in an easterly direction and forms several large deep bays at the foot of the steep and acclivous banks which constitute the north side of the (so called) hill.

This hill commands an uninterrupted view of the river, the Chaudiere Falls, the entire city and surrounding country for many miles. The buildings are placed on the highest and widest part of the land, and consist of three distinct blocks, laid out so as to form three sides of a quadrangle, with an opening towards the south.

The Departmental buildings stand furthest towards the south, and are about 100 feet north of Wellington street, and 700 feet apart, each block being of a rectangular shape, one side of which fronts towards the south and another to the east and west sides of the quadrangle respectively. The eastern block is 319 feet long on the south front and 245 feet on the west ; it also fronts towards the east or lower part of the city, and covers an area of 41,840 superficial feet.

The eastern block is 277 feet long on the south front and 220 feet on the east, covering an area of 36,276 superficial feet.

The south, or main front of the Parliament buildings, is 471½ feet long ; and the width, from the front of the main tower to the rear part of the library, is 370 feet, covering an area of 82,886 superficial feet, thus making the whole space occupied by the building, equal to 3½ acres.

The Parliament buildings are situated in the centre, between the other two blocks, at a distance of about 600 feet north of the street, and 175 feet diagonally from the eastern, and 360 feet from the western block, leaving an interior space between the different buildings of 700 feet from east to west, and 500 feet from north to south.

The assumed height of the basement floor of the Parliament buildings is 159 feet over the ordinary summer water level of the Ottawa river. The eastern and western blocks of buildings being respectively 135 feet 3 inches, and 142 feet 3 inches over the same datum.

This difference of level will, however, be rendered less perceptible, and is likely to produce an agreeable effect rather than otherwise, when a properly graded roadway is formed from Wellington street upwards to the Parliament buildings, along the east and west sides of the two other blocks ; and the intermediate space will be formed into a series of terraces, each kept somewhat lower than the ground lines of the different buildings, but high enough to correspond with the grade of the roadway.

In determining the height of the finished surface of the ground in the

vicinity of the different buildings, due regard was had, not only to their respective levels, but also to the natural surface of the ground, in order to avoid all unnecessary excavation, or additional walling and embankment.

Keeping these objects in view, it was decided that the level of the ground at the centre of the main tower of the Parliament House, should be assumed as the finished surface of the ground around it.

But there being considerable inclination towards the east, at the place where the other buildings were to stand, it was deemed prudent to sink the site of the western block; and to raise the basement floor of the eastern block about 3 feet 9 inches, or to the relative levels above stated.

From the general appearance of the hill before the works of excavation were commenced, it was believed that a suitable rock foundation for the structures would be obtained at a moderate depth below the natural surface. But on breaking ground, the rock was found to be exceedingly irregular, having generally a considerable dip towards the south and east, which, together with the sudden disappearance at places of parts, and not unfrequently the whole of the upper strata, and the faults and fissures which occurred at others, rendered it necessary to excavate to a much greater depth, to obtain a proper foundation, than was originally contemplated.

This, together with the works connected with sewerage and the heating and ventilation of the buildings, have caused a larger outlay, both for excavation and masonry, than under ordinary circumstances would have been required.

In order to furnish the information called for with as little repetition as possible, it is proposed to review the different works and matters connected with them in the following order, viz :

1st. Works connected with the system of heating and ventilation, adopted for the several buildings.

2nd. Drainage and sewerage.

3rd. Progress of works of Parliament buildings; changes authorized and recommended, &c.

4th. Progress of works of Departmental buildings, changes authorized and recommended, &c.

5th. Water and gas supply, bells, speaking tubes, &c.

6th. Superintendence, &c., &c.

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## 1st. HEATING AND VENTILATION.

It will readily be seen, from what has been said in reference to the extent of the different buildings, that no ordinary system of heating and ventilation was applicable to them. This having been foreseen at an early stage of the arrangements, but not provided for in the plans, information was publicly sought from persons practically acquainted with such matters, by a notice dated 14th November 1859, to the following effect, viz:

That « Tenders would be received until noon of Friday, the 30th « December next, from such competent plumbers and mechanics as are « prepared and disposed to undertake the heating and ventilation of the « Parliament and Departmental buildings at Ottawa ».

The tenders to state a bulk sum for which the contractor is willing to supply all the materials, and construct, erect, and put in successful operation all the works, machinery, and appliances connected with the entire system of heating for each building. He is to state upon what system his tender is based, and submit a full specification, accompanied by detailed drawings of its application, and guarantee its perfect efficiency for ten years after it goes into operation, &c., &c.

Subject to this notice, nine tenders were received; and on the 28th January, 1860, the work was awarded to Charles Garth, steamfitter, Montreal, at the bulk sum of \$61,285, for the completion of the heating and ventilation connected with all the buildings.

The plan submitted by Mr. Garth was approved of as being the most likely to effect the desired object efficiently.

The system and works connected with it generally may be described for each of the different buildings, as follows :

## PARLIAMENT BUILDINGS.

The heating is proposed to be effected by steam, conveyed in pipes from boilers situated under the central court applied to the Legislative Chambers, library, and rooms adjoining, on what is termed the « Vault System », and to the committee-rooms and other parts of the buildings on the « Coil System », or by direct radiation.

The « Vault System » may be described to be on the principle of having in all cases a duct of sufficient section of area for the introduction of an abundant supply of fresh air, situated immediately under a vault in which steam-pipes are placed, to warm the air on its entering

the vault from the duct through a perforated floor, and before it passes into the rooms proposed to be heated.

These ducts enter from all sides of the building ; three of them pass in a north and south direction, two of which are 9 feet in width for about 200 feet from the north end, the centre one being  $10\frac{1}{2}$  feet in width for a distance of 285 feet, each having a central division : from these points the widths are diminished to  $7\frac{1}{2}$  and  $6\frac{1}{2}$  feet respectively.

Each of these ducts has a separate outlet at the brow of the hill, or at about 75 feet north of the exterior walls of the library. At their south ends all the three are to converge into one (at 40 or 50 feet south of the main towers), which is to be further extended, and to terminate in an ornamental outlet in the Terrace wall.

A duct also passes from east to west, connecting with the others in the main building ; it is 4 feet in width inside of the angle towers, and 9 feet wide at the outer ends.

On the west, it runs out to the brow of the hill, and is to have an ornamental termination on the east side, at 100 feet, or more, from the buildings.

Under the centre of the library, a duct running in an east and west direction has also been formed, in case it should be found necessary at any future time to use a fan.

There are about 3600 lineal feet of these ducts, generally 2 feet 4 inches high, with sides built of dressed stone, and formed with a slight descent where they pass out of the building.

The excavation, masonry &c., connected with them, is estimated to cost \$56,600.

*Boiler-house.*—The floor of the boiler-house has been sunk about 11 feet below the contract line, which makes its whole height fully 22 feet. It is  $74\frac{1}{2}$  by 68 feet inside, and occupies the entire space under the great central court. The inner face of the walls and main shaft for downward ventilation and the escape of smoke, situated on the north side of it, and a stairway on each side at the south end, are formed of dressed block limestone.

The roof or covering of it, having to correspond with the general level of the floors and other parts of the buildings, must necessarily be flat ; it is therefore proposed to be formed of a heavy class of wrought-iron joists and trussed-built girders ; the spaces between to be filled with concrete, in a manner somewhat similar to the contract fire-proof floors.



This, together with the excavation, masonry, and construction of the main extracting shaft, is estimated to cost \$27,500.

In the boiler-house are to be placed six cornish boilers, each 20 feet long and 5 feet diameter, furnished with a steam-drum, safety-valve, guage-cocks, steam-valves, &c., also a steam-engine fitted up of sufficient power to work the necessary pumps, and throw 250 gallons of water per minute into the tanks placed in the towers. These latter are to be furnished under the contract for heating and ventilation; but the setting of the boilers, furnishing flue-pipes, boiler-fronts, &c., form an additional item of expense, the probable amount of which will be about \$5,700.

*Warm air Vaults*,—Situated over, and connected with the cold air ducts, as before stated, are to be formed under the corridors around the Legislative Chambers, and carried to and along, under the inside of the library.

They are to be of brick work, 9 feet in height, arched over on top, and will vary in width from 3 to 9 feet, their aggregate length being about 1260 feet.

*Hot-air Flues*,—14 by 9 inches, sectional area, are to be formed in the walls adjoining the committee-rooms, and such other parts of the buildings as are to be warmed on the « coil system ». The total length of these flues will be about 4306 feet, exclusive of 90 feet of others of greater dimensions, for the larger steam-pipes.

The probable cost of these vaults and flues will be about \$10,250.

*Foul air Ducts*,—For downward ventilation, are to be formed immediately below the floor, around both of the legislative chambers, library, and adjoining rooms. They are generally from 2½ to 3 feet wide and 1½ feet high; their aggregate length is 1162 feet, the cost of which will be about \$4000.

*Flues for Ventilation*,—14 by 9 inches are to be formed in the walls of the different rooms. Their total length will be about 9964 lineal feet, but 5328 feet of flues 9 x 4½ inches are embraced in the builder's contract.

To increase the dimensions of these, and form the additional quantity required, will cost about \$3300.

*Ventiducts in Roofs*,—For upward ventilation, proposed to consist principally of earthenware or galvanized iron pipes, varying from 6 to 24 inches in diameter, and in some places of triangular shaped flues of an equally non-combustible material.

Their aggregate length will be about 4952 lineal feet, and their probable cost \$3,400.

The construction of small ventilating shafts, descending flues from legislative chambers, and additional thickness of interior walls, rendered necessary by the increased dimensions and greater number of ventilating and hot air flues, is estimated to cost \$12,700.

And other works, not enumerated above, will cost about \$6,550.

Thus the estimated outlay for works connected with the heating and ventilation, not included in either of the contracts before referred to, amounts to \$130,000, to which should be added, at least 5 per cent for contingencies, making the total \$136,500.

#### DEPARTMENTAL BUILDINGS.

Arrangements have been made to heat both the blocks of buildings for the public offices on the « vault system » above referred to; the warm air being admitted by means of registers from flues carried up in the walls, leading from openings left in the arches of the vaults.

To the front rooms the warm air will enter all but directly, and to those in the rear it will be introduced from the vaults, through galvanized iron tubes placed obliquely.

The upper parts of the building are to be warmed from flues, carried to 18 inches over the floors of the respective rooms.

*Cold air Ducts*,—Enter on all sides of the buildings. Those connected with the eastern block have three inlets on the west, two on the south, three on the east, and three on the north side. Those for western block are similarly situated, with the exception that there is one inlet less on the east side.

The ducts are generally  $3\frac{1}{2}$  feet wide, and fully  $2\frac{1}{2}$  feet high. Such portions of them as are in the interior of the buildings are built of dressed block limestone, but their extension outwards is to consist of a good class of rubble masonry, except for about 30 or 40 feet at their extreme ends, (see letters marked A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, hereunto appended).

On the south side, it is proposed to carry the ducts out to the front fence, and there finish their outlets with appropriate terminations. Those on the east and west sides of the respective buildings are to be carried out under the roadway, and terminate in the Terrace Wall within the quadrangle. On the north and east they are to extend out to the brow of the hill, and are with advantage constructed in the upper part of the excavation made for the drains.

The aggregate length of the ducts for the eastern block is about 3515 feet ; and those for the western block 2179 feet ; making a total of 5694 feet ; which, including excavation and masonry, are estimated to cost \$78,000.

This expense might, however, be to some extent diminished, by forming two or more ducts into one, where they connect outside the buildings, and to which, in my opinion, there can be very little (if any) objection, provided that an equal sectional area be given for the ingress of air.

**Boiler-Houses.**—The floors of the boiler-houses have been sunk 11 feet below the footings of the basement walls. The space occupied by the one for the eastern block is 1956 feet area ; that for the western block is 2256 feet area.

The inner face of the walls consists of dressed block limestone, and the rear of rubble work. The roofs are proposed to be formed of trussed iron girders with intermediate rolled iron joists, and the spaces between them filled with concrete. These works are estimated to cost \$19,300.

In each boiler-house, two cornish boilers, each 20 feet long and 5 feet diameter, are to be fitted up with all necessary appendages and arrangements for their efficient use, under the contract for heating and ventilation. The setting of the boilers, furnishing iron chimney-pipes, together with an additional ventilating shaft, form a separate item, the probable amount of which will be, for both blocks of buildings, \$10,500.

The probable cost of the following items, before described, will be :

*For warm air vaults*,—4 feet wide and 9 feet high, length in eastern block 670, and western block 600 feet.

Total 1270 feet . . . . . \$16,000.00

*For hot air flues*,—9½ by 9½ inches, 4,260 lineal feet, and ducts for ventilation 9,200 lineal feet. Total 13,460 feet (or fully 2½ miles), of which part is provided for in builder's contract. These flues, when built, are carefully coated with a chemical solution, in order to facilitate the passage of air. . . . . \$ 2,000.00

*Ventiducts in roofs*, consisting of stoneware pipes, &c., length 7,100 feet, doors to air chambers, &c., &c. . \$11,400.00

*Additional thickness of interior walls*, rendered necessary by increased number and dimensions of flues . . . . \$ 9,700.00

The aggregate cost of cold air ducts, boiler-house, ventilating shaft, &c., together with the items above enumerated, will give a total of \$146,800.

No provision having been made for these works in the plans on which the building contracts were let, they necessarily come under the head of additional works.

Their extent, however, precludes the supposition that they could have been anticipated by contractors when submitting schedules of rates for ordinary charges, or «extra work».

Presuming this view to be correct, the classes of work referred to, have been estimated at their actual value, allowing in all cases the usual margin for the contractors' profits. (See letters marked B 1, B 2, B 3, B 4, B 5, B 6, appended.)

Some of the objects proposed to be gained by the mode of carrying out the system of heating and ventilation adopted, may be stated as follows :

1st. The sinking the floor of the boiler-house fully 10 feet below the level of the basement floors, admits of the boilers being placed sufficiently low to allow of the condensed water from the steam pipes returning to them without loss of temperature, or the necessity of pumping; and diminishing the probability of noise in the working of the system. But had the boilers been placed on the same level as the basement floors, the whole of the return water would have had to be collected in condensed water cisterns and pumped from them into the boilers, causing not only a loss of temperature and waste of water, but requiring more fuel and attendance, besides wear and tear of machinery.

2nd. By continuing the cold air ducts for a considerable distance underground, the temperature of the air will be to some extent increased before reaching the place where it enters the warm air chambers, thereby diminishing the risk of accident to the steam pipes. From the ducts having inlets on all sides of the buildings, there is a probability of obtaining an abundant supply of fresh air at all times, from whatever quarter the wind blows; and which, it is believed by persons practically acquainted with the subject, will to a certain extent obviate the necessity of resorting to a fan.

3rd. By the arrangement of the radiating coils and steam-pipes in a continuous chamber, in the top of which flues are formed, communicating directly with the various rooms and corridors proposed to be heated, a more certain and uniform supply of pure air, warmed to the temperature required, can be furnished, than could have been done either by forming

a number of detached chambers, or by direct radiation ; while at the same time it admits of a more effective system of ventilation being obtained, than if the radiators or coils were placed in a position where they would only warm, without changing the air of the rooms.

4th. The proposed continuous horizontal ventiducts through the attics, are intended to confine the vitiated air until it reaches the ventilating shafts or places of exit through the roof ; experience having proven that if the foul air is allowed to diffuse itself under a cold roof, it has a tendency to condense as its temperature falls, and is as likely to return through the flues, as to escape through the openings left for that purpose, in the ventilating shafts.

It is proposed to ventilate the legislative chambers on both the « upper » and « lower » systems ; avoiding, if possible, the use of fans or machinery that would have any tendency to condense the air, or create unusual draughts in the buildings.

The first will be effected by leaving a sufficient number of openings in or near the ceilings, to allow the vitiated air to be drawn off towards the ventilating towers through ducts formed in the attics ; to facilitate which, powerful steam coils are to be placed in each of the four towers provided for that purpose in the original plans, and embraced in the builder's contract.

To render the downward system efficient, perforated iron gratings are to be placed along the front and back parts of the galleries, connecting with flues in the walls in rear of the members' seats ; and with horizontal ducts formed near the floor, which lead to the main extracting shaft, in which are placed cast-iron flues to carry off the smoke from the boilers.

The heat of these smoke flues, it is believed, will create a downward draught sufficiently powerful to effect, in the way of ventilation, what was left undone by the upward system.

Those who have devoted much time and attention to this subject, although they differ in opinion as regards the actual results of downward ventilation, generally agree that in extremely cold weather very large rooms cannot be efficiently ventilated by the upward system alone, except at a greater sacrifice of fuel, and to the inconvenience of their occupants.

As the peculiar construction of the library does not admit of vertical flues being formed in the walls, it will therefore be ventilated principally on the downward system.

The committee-rooms, and offices connected with the Parliament

buildings and the Departmental offices, are all to be ventilated on the upward system, by means of vertical flues carried up separately, and connected with the foul air tubes in the attics ; each room having two valvular registers, one of which is a short distance over the floor, and the other near the ceiling, opposite the same flue.

It may further be said in reference to the mode of warming the legislative chambers, that the air, in passing out of the vaults, enters the rooms at various points along the walls and through fine perforated iron gratings arranged at the front and ends of the platforms on which are placed the speakers's chair and the members' seats.

The results anticipated from the system as a whole, being an equal distribution of heat throughout the building, and the avoidance of currents of air. This is expected from the heat being generated immediately under the place where it is required, instead of at such a distance as would render it necessary to force the air in by means of machinery.

In regard to the committee-rooms and offices, departmental and otherwise, it may be said that in addition to the general mode of warming, each room is to be provided with a fire-place, so that those who prefer either of these modes, or even a stove, can be accommodated without the necessity of making any great alterations in the arrangements.

## 2ndly. SEWERS AND DRAINS.

Provision has only been made, in the specifications attached to the different contracts for glazed stone-ware drain-pipes, as follows :

|                         |   |                               |            |
|-------------------------|---|-------------------------------|------------|
| Parliament buildings.   | { | Pipe 12 inches diameter . . . | 100 yards. |
|                         |   | Do 9 do do . . .              | 200 do.    |
|                         |   | Do 6 do do . . .              | 300 do.    |
|                         |   | Do 4 do do . . .              | 300 do.    |
|                         |   | Junctions, &c.                |            |
| Departmental buildings. | { | Pipe 12 inches diameter . . . | 1000 feet. |
|                         |   | Do 6 do do . . .              | 1000 do.   |

Thus it appears that nothing more was contemplated than a system of ordinary surface and branch drains.

This is also to be inferred from the fact that when the specifications were prepared, the actual sites of the buildings had not been determined.

I am therefore of opinion, that the construction of all sewers and drains, apart from those specially referred to, must be classed under the head of additional work and be paid for at its actual value.

The ground forming the site of the buildings having a general declivity towards the south, the natural course of drainage lies in that direction,

but, unless a sewer were constructed along Wellington Street, no outlet could have been obtained for it. This was considered objectionable, inasmuch as a sewer made in any street of the city, must of necessity be under the control of the Corporation. Moreover, by giving the main sewers a southerly outfall, they would have had to pass under the respective buildings they are intended to drain, and have required branch connections of considerable length, while the height of ground on the north prevented their being carried in that direction.

In determining the position and direction of the principal sewers, the following objects appear to have been kept in view.

1st. The nearest available point of discharge, and to have the respective lines so arranged, that the upper part of the cut made for them, could be used advantageously for the construction of « cold air ducts ».

2nd. To place them in rear of the buildings, and as close as circumstances would permit, so as to collect the sewerage from the sinks, closets, &c., by short branch drains, and to sink them to the depth required to drain the boiler-houses, which, as before stated, are from 10 to 11 feet below the line originally contemplated.

*Parliament buildings.*—The extent and the peculiar arrangement of the plan of the Parliament buildings, rendering it inexpedient to attempt forming any system of branch drains that would converge to one point, it was decided to form two outlet sewers, one leading towards the east, and another towards the west, by which the respective sides of the buildings might be drained.

The former is intended to connect (within a short distance of the edge of the cliff) with a sewer leading from the eastern block of the Departmental buildings. It is proposed to be formed of large sized glazed earthenware socket pipes, placed at the depth required to discharge the sewerage of the buildings only.

The probable cost of which will be about \$1500.

The sewer on the west side is 396 feet long, from the boiler-house to the brow of the hill; it is 3 feet wide by 4½ feet in height, the top and bottom being arched, and the sides formed of dressed block limestone.

The excavation for it varied from 15 to 20 feet in depth, principally through rock lying in thick strata, which, from the narrowness of the cut and nature of the rock, rendered the work expensive.

It is proposed to continue the sewer towards the river by means of a line of cast-iron pipe, 18 inches inside diameter, carried obliquely down the face of the bank and well imbedded in it; extending out into the current

and deep water, and there anchored with the mouth in a down stream direction.

The probable cost of excavation and masonry, together with the extension leading into the river, will be about \$29,000, including that on the west side ; the additional cost for drains will amount to, \$30,500.

*Departmental buildings.*—The sewers of both blocks commence at their respective boiler-houses, are sunk one foot below them, and are carried nearly parallel with the walls ; curving gradually where necessary to diminish the extent of the various branches ; thence following the shortest course through the lowest ground to the brink of the hill, where it is proposed to connect them with cast-iron pipes, arranged as before stated.

*Eastern block.*—The sewer leading from this block will be about 402 feet long,  $2\frac{1}{2}$  feet wide, and  $4\frac{1}{2}$  feet high ; made with a dished bottom and arched top. The interior face, beds, and joints, are of rough boucharded work ; and a stink and vermin trap is formed near the boiler-house.

The depth of the cut made for it varies from 17 to 30 feet ; and the width from 18 to 30 feet at top, and  $13\frac{1}{2}$  feet at bottom. With the exception of about 160 feet in length and 4 feet in depth near the building, the whole of the excavation consisted of a hard class of limestone rock, extremely difficult to remove, not only from the nature of the material, but from the contracted space in which the operations had to be conducted. The cost of excavation, masonry, &c., will be about \$36,000.

*Western block.*—The sewer connected with this block is about 370 feet long, of like dimensions and similar construction to that previously described. The cut made for it is about 22 feet wide on top,  $14\frac{1}{2}$  feet at bottom, and varying in depth from  $23\frac{1}{2}$  to  $28\frac{1}{2}$  feet. For 160 feet in length from the boiler-house, and  $4\frac{1}{2}$  feet in depth, the excavation consisted of cemented clay and gravel ; at all other places it was of the hardest description of limestone, of an irregular contorted formation, and laying in such thick, unshapely masses, as rendered its removal from a deep narrow cut exceedingly difficult and expensive. The cost of excavation, masonry, &c., is estimated at \$43,000.

The extent and purpose of the buildings now under consideration render the adoption of a thorough system of heating, ventilation, and drainage, a matter of no less importance than either their interior arrangement or external architectural effect.

But no adequate provision having been made in the contract for these indispensable works, a large and unavoidable outlay has become necessary for their proper and efficient accomplishment.



### 3rdly. PROGRESS OF WORKS CONNECTED WITH THE PARLIAMENT BUILDINGS &c.

The site of the buildings, and assumed level of the finished surface of the ground around them having been fixed upon, preparations were at once made to excavate the foundations to the depth required by the contract plans. It was, however, found, that at several places, the depth to the rock was greater than anticipated, and at others it was of so faulty a nature, that it could not be depended on for a foundation until several of the upper strata had been removed.

At the south corner of the east wing, the excavation, consisting of clay and boulders &c., was  $16\frac{1}{2}$  feet in depth ; at the main tower,  $6\frac{1}{2}$  feet ; at the south corner of west wing,  $6\frac{1}{2}$  feet ; at north corner of west wing, 3 feet 5 inches ; and north corner of east wing, 5 feet ; all below the level of the contract footings ; and the library was 2 feet below the same level.

But from the depth required for the boiler-house and air-ducts connected with the system of heating and ventilation, it was considered less expensive to build a greater height of foundation walls, than to lower the finished surface of the ground, as the latter would have necessitated a large quantity of expensive rock excavation. When the works were commenced, the ground was covered to the depth of from 2 to 3 feet with snow, which not only prevented the most advantageous places being selected for depositing materials, either arising from the excavation or intended for the buildings, but also the ground, having been frozen to a considerable depth before the snow fell, rendered many parts of the earth excavation as difficult and expensive as the ordinary class of rock.

Great difficulty was also at first experienced in obtaining a suitable class of building-stone ; for although Barrack Hill and the surrounding country abounds in stone, the few important structures built of it led to a rather unfavorable opinion of its durability ;—not excepting the range of locks at the outlet of the Rideau Canal or the bridge at the Chaudiere Falls.

The neighbourhood on every side was therefore searched for quarries ; and several places were tried, which, after considerable outlay, had to be abandoned, either from the defective nature of the stone, or from a failure in the quantity.

For these reasons, the spring was far advanced before a decision could be arrived at in regard to the places where stone for exterior

work could be obtained ; while, from the extent of the works and comparative newness of the city, it was difficult to procure a sufficient number of skilled workmen.

The works of excavation, erection of work-shops, and the manufacture of plant and implements, were, however, proceeded with ; brick yards were established, rubble stone for foundation delivered, and lumber purchased and deposited on the grounds.

The first masonry was laid on the 26th April, commencing at the east side of the main wall of the library ; the foundation of which required a vast deal of labour to « step » and level, in consequence of the irregularity and dip of the rock.

In *May*, the foundations of the boiler-house, Legislative Council Chamber, and rooms adjoining were laid.

In *June*, the foundations of the main central tower and part of east wing were laid, and a quantity of Ohio sand-stone for exterior dressings was delivered.

In *July*, the walls previously founded were carried up, and a large quantity of stone-cutting done.

During the month of *August*, part of the west wing was raised several feet above the ground line, and the foundation of part of it was also commenced.

On Saturday the 1st day of *September*, His Royal Highness the Prince of Wales, laid the corner-stone in the pier, immediately under the north east main angle pillar of the Legislative Council Chamber. During this month, the foundations of all parts of the buildings west of the central tower were proceeded with, the excavation of the main sewer completed, the building of it commenced, and a large quantity of stone cut.

In *October*, the greater part of the foundations were completed, the walls of the library continued, and the whole of the front walls were carried up to the plinth line. The main sewer was extended, and a temporary roof erected over the boiler-house, to admit of the boilers being made.

In *November*, the east and west walls and towers of both wings were carried up to the top of the plinth ; the plinth and moulded string course set, all along the front and return walls ; several of the inside brick walls were carried up, and some of the ground floor iron joists laid ; the arches in main towers over the entrance were begun, and the front tracery windows of the central hall set.

The main sewer and cold air duct over it were proceeded with, and preparations were made to protect the walls from the effects of winter.

In *December*, the arches in the main tower were completed, the main sewer and cold air ducts over it were, for a time, carried on; and the excavation for air ducts running north and south was continued.

The building operations were generally, in the early part of this month, suspended, and the walls covered up.

The actual state of the works, at the time of my visit, may be briefly described as follows :

The whole of the foundation walls, including those connected with ventilation, were completed. The front walls, eastern and western flank walls, were carried up to 1 foot over the ground floor line, or 11 feet over the finished ground line. The arches in the tower over the main entrance completed; and the front tracery windows of the central hall set. The main walls of the library were 5 feet over the ground line; several of the brick walls in the wings were up to the ground floor line. All other walls were levelled up to the basement, and, in some cases, up to the finished surface of the ground. The main sewer was extended for a distance of 250 feet from the central court, and the excavation for the whole completed.

The following is an abstract of the principal items of work done and materials delivered, from the commencement of the work up to the 1st. *February* last.

|                                                                                     |                  |           |
|-------------------------------------------------------------------------------------|------------------|-----------|
| Excavation, earth, &c., . . . . .                                                   | c. yds.          | 33,568    |
| Do rock, . . . . .                                                                  | do.              | 17,217    |
| Rubble stone delivered . . . . .                                                    | do.              | 26,676    |
| Masonry built, . . . . .                                                            | do.              | 14,542    |
| Bricks delivered, . . . . .                                                         | n <sup>o</sup> . | 1,122,700 |
| Do laid . . . . .                                                                   | do.              | 507,965   |
| Block limestone, delivered and dressed, . .                                         | c. ft.           | 56,000    |
| Do laid . . . . .                                                                   | supl. ft.        | 34,000    |
| Ohio and native sand-stone, delivered and cut, (part<br>of which is laid) . . . . . | feet             | 40,800    |
| Lumber delivered, . . . . .                                                         | feet b. m.       | 745,000   |
| Rolled iron joists and built girders, . .                                           | tons             | 330       |
| Nepean stone facing, delivered and prepared, supl.<br>yards. . . . .                |                  | 2,252     |

Other works have been executed, preparations made, and materials delivered, which it is deemed unnecessary to enumerate.

In a letter of instructions from the department to the Architects, dated 12th December 1859, informing them that a contract had been entered into for the works, &c., &c., it is stated that,

« In carrying out the plans and furnishing details, you are further « instructed to make the following modifications and alterations, in conformity with terms of the contract. »

« 1st. To leave openings for doors in the basement walls of the rooms « in the front part of the building, so as to give access and fit them for « future use, should they be required ; giving them light from without « and fire-places within. »

« 2nd. Convert portions of the basements into fuel-vaults, and make « through passages large enough to take a cart or truck through. »

« 3rd. Open passages through walls of the parts of the plan marked « no basement », as a means of access in laying gas and water pipe. »

« 4th. Remove the water-closets and urinals from side of principal « entrance lobby to the adjoining rooms, and open loop-holes in solid « walls to light them. »

Subsequently, a notice dated 14th February, 1860, (of which the following is a copy) was sent to the Contractor by the Architects.

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ORDERS TO CONTRACTOR FOR EXTRAS.

« SIR, »

« You are hereby requested to excavate the ground for the various « foundations down to the surface of the rock ; and also the whole area « of the central court, and all the trenches requisite for the cold air « ducts, in connection with the warming apparatus : and leave openings « for doors in the basement walls of the rooms in the front part of the « buildings, so as to give access and fit them for future use, should they « be required ; giving them light also from without and fire-places within, « as shewn on the working drawings.»

(Signed,) FULLER & JONES.

Architects for Parliament Buildings.

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The additional depth of excavation in earth and rock for the foundations (to which the above order refers), and consequent increased quantity of masonry below the contract line, together with the extra filling from the same cause, will cost about \$46,000.

By the alterations directed to be made in the basement, 12 additional rooms were rendered available, the largest of which is 484 feet area, and the smallest 216 feet ; their total area being 3664 superficial feet.

The spaces for fuel vaults underneath the Legislative Halls &c., in the aggregate are 4550 feet area ; space under map room adjoining library (which might be used as a store room), 1680 feet area ; and space under library, 3404 feet area.

For these rooms and vaults 34 additional sets of window dressings and windows, were required ; 22 doorways and 26 archways were formed.

The probable cost of which will be \$7,000.

To increase the space for the carriage approach to the grand entrance, and to improve the appearance of the Public hall, the main tower was placed about 9 feet further out from the front line of the building, than shewn on the contract plans. This, by rendering the tower a more prominent feature in the outline, adds greatly to the general effect.

Arnprior marble was also substituted for sandstone, for the shafts of the pillars at the main tower entrance. These changes are estimated to cost \$4,100.

Increasing the dimensions of the buttresses around the library, so as to present a greater resistance to the thrust of the roof, and substituting a tower over the corridor at entrance to library, for the chimneys and buttresses provided in contract. The cost of these alterations will be about \$5,450.

Substituting stone for brick in the external walls of the inner courts, and other small additional works not enumerated, will cost \$1600.

When the contract plans and specifications were prepared, comparatively little was known of the nature or class of materials that could be obtained in the vicinity of the works for building purposes, except that there were several varieties of limestone, some of which were understood to be of a durable class, and others, when exposed, yielded rapidly to the influence of the weather.

It was, however, believed that if the best class were carefully selected for exterior work, there could be no doubt whatever of the durability of the structures.

The buildings were, therefore, let with the full understanding that they would be constructed of limestone, such as would be found in the locality ; except the window and door dressings &c., which were described in the specifications as to be executed with yellow sand-stone

« from Perth, or the « Cleveland stone », or any other stone of equal « quality that may be approved ».

But shortly after the works were commenced, it was ascertained that a light-colored sandstone could be obtained in the township of Nepean, within about ten miles of Ottawa.

The stone is of what is known as the « Potsdam sandstone » formation, of rich and varied tint, and of a durable class. It was highly recommended by the Architects and others, as being much superior to the dark colored limestone for face work in the style of architecture adopted for the buildings, and that its use would add more to their appearance than could be done in any other way for a much larger sum than the difference of cost between the two classes of stone. .

On these representations, authority was given to substitute « Nepean » sandstone for limestone, for facing the exterior walls of buildings. The additional cost of which, at the rate stated in the *Order in Council*, will be about \$16,760. See Appendix C 1, C 2, C 3, C 4, C 5, and C 6.

The expenditure for works in progress and authorized, connected with the Parliament buildings, exclusive of those under contract, is as follows :

|                                                      |                  |
|------------------------------------------------------|------------------|
| Works connected with heating and ventilation . . . . | \$136,000        |
| Do do sewers and drains . . . .                      | 30,500           |
| Do do additional foundations . . . .                 | 46,000           |
| Do do alterations in basement . . . .                | 7,000            |
| Do do tower and main entrance, &c. . . .             | 4,100            |
| Do do library. . . . .                               | 5,450            |
| Do do inner courts, &c. . . . .                      | 1,600            |
| Do do exterior facing of walls . . . .               | 16,760           |
| Total. . . . .                                       | <u>\$247,410</u> |

#### ALTERATIONS AND WORKS RECOMMENDED.

For durability and security against fire, it is recommended that iron roofs be substituted for those of timber provided by the contract ; especially for the Legislative Chambers, corridors, and picture gallery, which are proposed to be lighted at night by means of a series of gas-burners, arranged in the attics, and reflected through ground-glass panels formed in the ceilings.

This mode of supplying light, although doubtless the least economical, will be by far the most agreeable that could, under any circumstances, be adopted.

But the heat generated by so many burners as will be necessary to effect the object in so confined a space, would, it is believed, prove destructive to a timber roof, no matter what precautions were adopted for its preservation. (See appendix D.)

The additional cost of iron roofs for the Legislative Chambers, picture-gallery, &c., over the contract, will be about \$16,000.

As fire can only be communicated from the inside of the buildings, it is proposed that only the ceilings of the committee-rooms, reporters' and south front rooms should be made fire-proof, by the use of light joists of rolled iron and of concrete, as provided for the floors.

The additional cost of which is estimated at \$9,000, and lining raking wooden ceilings with sheet iron, \$4,800 : making for iron roofs and fire-proof ceilings, as above described, the sum of \$29,800.

To substitute iron for wood, in all the roofs of the buildings (dispensing with fire-proof ceilings), would cost about \$46,800.

The mode of lighting certain portions of the buildings from the roof, having recently occupied the attention of the Architects, they propose, in cases where skylights are in a position likely to be endangered by snow or ice falling on them from a more elevated portion of the roof, to form a protection by means of a projecting arcade. This would, no doubt, prevent leakage, and considerably improve the appearance of the buildings ; but there is reason to fear that it would in certain courses of the wind, cause such snowdrifts to form, as would, more or less, obstruct the entrance of light.

The works connected with it, together with the construction of buttresses for the purpose of strengthening parts of east, north, and west walls, and alterations to some of the windows, would cost about \$8,000. (See appendix E.)

The ornamental wrought-iron cresting for the roof forms an additional item, which it is desirable should be authorized and the work at once commenced, so that it can be prepared in sufficient time to be placed before the slates are put on. Probable cost, \$20,000.

The carving of the wood cornices shewn on the drawings but not embraced in contract, for both the Legislative Chambers, will also be a work requiring considerable time, and should therefore be proceeded with as early as circumstances will admit. Cost, \$3,200.

A careful examination of the plans and model of the library, very justly gives a favorable impression of the general character of the structure and boldness of the design. But as the plans, both of it and the other buildings, have been long in possession of the department, it is deemed unnecessary to say more in reference to either than will serve to draw attention to questions affecting their stability.

Under this head has already been mentioned the strengthening of the interior walls ; buttresses of the inner courts, and for the east, north, and west exterior walls ; iron roofing &c., of the buildings ; and the strengthening of buttresses around library.

In further reference to the latter, it may be said that although the vertical walls of the structure, strengthened by the outside buttresses, are, theoretically, more than sufficient to resist the thrust of the arched roof over them, it would, nevertheless, in my opinion, be judicious to allow, practically, a still greater margin. It is therefore recommended that the walls of the library be increased *six* inches in thickness throughout, and that the outside buttresses be also made *six* inches thicker than previously authorized. The probable cost of which will be \$4,500.

On the drawings, the ribs of the arched roof of the library are represented as marble ; but in the list of « *Questions and Answers* » appended to the specification, they are stated to be Ottawa limestone rubbed : a change made, no doubt, from motives of economy.

But both the original intention and the change are evidently wrong, if the library is intended to be made perfectly fire-proof, as neither marble nor any other class of limestone is capable of resisting the action of fire ; while their weight is greater than many varieties of sand stone well adapted for the purpose.

It would, at all events, be judicious to select stone of the least specific gravity and greatest cohesiveness, whatever might be its color or texture, and, if need be, expend a moderate sum in the encaustic illumination of the ribs ; which, it is believed, would have as fine an architectural effect as could be produced by any marble, however highly polished.

In regard to the buildings, it is believed that the hollow space between the interior bricklining and walls of the six angle towers on the front and returns, should be omitted, especially at their connections with the inside division walls.



It would also be well to add another tier of wrought-iron chain-bond, to the central tower, immediately over the main entrance arches.

By the contract, the pillars, piers, caps, bases, plinths, and arch moulds in the Legislative Chambers « are to be executed with Arnprior « marble or other marble of approved quality. The pillars and piers to « be of the dark color ; the caps, bases, and strings of white marble. « The arch moldings and circles in spandrels also to be of white and « grey marble, in about equal quantities. The piers under bases of « pillars to be of solid block, dark colored marble.» The Architects, however, state, that although Arnprior marble is specified and a specimen of it was shewn to contractors as a guide when tendering, they find « its dark color is unsuited for the work, except in small quantities.»

They have recently obtained specimens of marble from Kingston, Belleville, and Grenville, the cost of which, respectively, would be about \$2.50, \$1.40, and \$1.30 per cubic foot ; that of Arnprior being \$1.50.

They have not been authorized to incur any expense in searching for or opening quarries, or in obtaining information about other native materials.

They therefore suggest « the appointment of a special commission « or otherwise, to ascertain what the resources of Canada are, in all « materials suitable for building purposes ; and, where found of an appropriate quality, they should be used irrespective of the extra cost. « These buildings would then most appropriately form the Provincial « Mineral Museum ».

« The foregoing remarks apply equally to the woods to be used in the « joinery. Some rooms should be finished in maple, some in oak ; others « in walnut, cherry, white wood, pine, &c., and not all of one kind, as « per contract. »

It is, however, believed that the introduction of such a variety of materials, both as regards their class and color, in the execution of a building destined for such dignified service, whilst it might gratify the curious, would decidedly be at variance with all principles of good taste, and could scarcely be tolerated either by the Government or the public.

An opinion regarding both the locality and class of the various marbles, can readily be obtained from Sir William Logan, whose willingness to impart every information as to the Geological formation of the Province is equal to his eminent qualifications to supply it.

The nature and varieties of native woods are so commonly known that no special enquiry would seem to be needed upon the subject.

It is believed that the price for marble, for which provision is made in the contract, should be the maximum rate for all that is used in the buildings; although it may be desirable in some cases, for the sake of a rich color, to obtain it from a different place.

The specification provides that the joiner's work shall be of pine prepared for staining and varnishing, but in some cases oak is specified, which might have been judiciously used to a much greater extent in buildings of this class.

There does not appear, however, sufficient reason to make any change in the class of wood; except that the finishing of the Governor General's rooms might very appropriately be of oak; the Executive Council rooms of maple; the wardrobes of red cedar; and the smoking rooms of white wood.

For the ordinary rooms no change is necessary; while for the more important parts such as the Legislative Chambers, corridors, and picture gallery a pine finish is sufficient; as the effect of richness can be obtained better, and perhaps cheaper, by «encaustic colored illumination» heightened by a limited quantity of gilding, than could be done in any other way.

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#### 4th. PROGRESS OF WORKS CONNECTED WITH THE DEPARTMENTAL BUILDINGS, &c.

The position and relative height of the ground floors of the different buildings having been determined, the works were immediately commenced. But before much progress had been made, it was found that the site of the *eastern block* was on a rock of a still more faulty nature; and, at the east corner, at a greater depth below the surface; than described for the Parliament buildings.

This rendered it necessary to excavate an average depth of about 9 feet below the line of the contract footings, to obtain a proper foundation; which, together with cutting «steps», levelling the rock, and building up large fissures therein, caused considerable additional outlay.

The first masonry of this block was laid on the 2nd April, and from that time until the end of the season, building operations were uninterruptedly continued.

At the time of my visit the state of the works was as follows : all the walls of the basement story were completed, and those of the ground floor story were up to the arches of the windows ; except a part from the centre doorway to the south east angle, and a part of the outside rear wall.

The main angle tower was carried up to the spring line of the upper floor windows ; ground floor iron joists laid ; cold air ducts through the interior built ; and about two thirds of the hot air vaults all but completed.

All the stone was cut for the window and door dressings of the ground floor story, and a considerable quantity for the upper story.

The principal part of the face stone was prepared, and a large quantity of all classes of materials delivered ; the excavation for the main drain was also completed.

The site of the *western block* having been lowered to bring it near the level of the eastern one, necessitated a large quantity of additional excavation, principally through rock of an exceedingly hard nature, lying in such irregular and distorted masses as rendered it extremely difficult to remove.

The great dip of the *stata* also made it necessary to cut steps for the greater part of the space occupied by the walls.

This retarded the works so much, that it was the 26th July before the masonry was commenced.

In January last the state of the works was as follows : the greater part of the excavation, both for the foundation of the building and the main drain, was completed ; the masonry of the basement of south and west fronts was levelled up to the base course ; the north west angle projections were carried up to the arches of the ground floor windows ; part of the cold air ducts and hot air vaults were built in the west returns of the south wing ; and the boiler-house was built to the plinth line of the rear walls of the building.

A considerable quantity of stone was cut for the ground floor door and window dressings &c., and a large quantity of all classes of building materials delivered.

The remarks previously made, in regard to the difficulty of procuring materials and workmen, are equally applicable to these buildings.

The following is an abstract of the principal items of work done and materials delivered for both blocks, up to the 1st February, 1861.

|                        |                |        |
|------------------------|----------------|--------|
| Excavation, earth &c., | c. yards . . . | 27,836 |
| Do rock                | do . . .       | 29,244 |

|                                                                                                       |               |           |
|-------------------------------------------------------------------------------------------------------|---------------|-----------|
| Rubble-stone delivered                                                                                | c. yds. . . . | 26,750    |
| Masonry laid                                                                                          | do . . . .    | 18,210    |
| Bricks delivered                                                                                      | n°. . . .     | 1,096,000 |
| Do laid                                                                                               | do . . . .    | 1,045,000 |
| Block limestone prepared and delivered, cubic<br>and superficial feet . . . . .                       |               | 59,400    |
| Block limestone laid, cubic superficial feet . . .                                                    |               | 24,000    |
| Ohio and native sand-stone feet delivered, pre-<br>pared, and partly laid . . . . .                   |               | 40,000    |
| Timber and lumber delivered, feet . . . b. m.                                                         |               | 1,450,000 |
| Rolled iron joists delivered, tons, (of which 90<br>tons are laid). . . . .                           |               | 305½      |
| Nepean stone facing, delivered and prepared, super-<br>ficial yards (one third of which is laid). . . |               | 8,700     |

Other preparations have been made for the delivery of materials and execution of the works, which it is deemed unnecessary to enumerate.

In a letter of instructions from the department to the Architects (dated 10th December 1859) it is stated that :

« In carrying out these plans and furnishing detailed drawings, you are further instructed to make the following modifications and alterations, in conformity with the terms of the contract : »

1st. « To alter the arrangement of the right or eastern block, as shewn on the plans submitted for tender ; so that instead of the longer front and the Governor General's entrance being on Wellington street, they shall be on the square, and the shorter face to front on Wellington street.»

2nd. « To alter the position of the small tower of the right-hand block, and place it at the eastern end of Wellington street front.»

3rd. « The small octagonal turret at the north west angle of the south wing of the left-hand block, to be projected forward, in order to leave the room clear of walls, girders &c..»

4th. « Do away with the projection of photograph room, and provide a room for that purpose in the higher part of the roof of the left-hand block.»

5th. « Leave openings into any of the enclosures of the basement of both blocks, when the foundation walls are of sufficient height to render these enclosures available as room for future use.»

On the 28th February, the Architects sent an order to the contractors, of which the following is a copy.

## ORDER TO CONTRACTORS FOR EXTRAS.

« GENTLEMEN, »

« You are hereby requested to continue the surface excavations under  
 « the suites of rooms of both blocks of Departmental buildings next  
 « Wellington street, to admit of future use of those portions of the  
 « basement ; also to excavate trenches for all walls, piers &c., of both  
 « blocks down to the solid rock, and to level the same : and also to ex-  
 « cavate for boiler-houses and other works connected with the contract  
 « for heating and ventilation ; continue the walls down to the rock in  
 « every case, and make doorways, windows, and fire-places to the  
 « suites of rooms in those portions of the basement above mentioned ».

(Signed) STENT &amp; LAVER,

Architects for Departmental buildings.

The alteration of the position and arrangement of the *eastern block*, above referred to, rendered several changes necessary to adapt the east end of the building to its new position.

These consisted principally in an extension of 40 feet, and the erection of a tower at its extremity ; which, from reversing the position of the block, would otherwise have been placed next the Parliament buildings.

This end was designed to have been of a plain description of work ; but when placed facing the lower part of the city, it was then considered of sufficient importance to warrant a change in its style and an improvement of its general appearance.

The number of windows was not increased, but an additional entrance was made in the tower. These works, together with the increased quantity of excavation, caused by placing the longest front of the building in a north and south direction, are estimated to cost \$16,280.

The additional depth of excavation in earth and rock for the foundations, and consequent increased quantity of masonry below the line of the contract footings, together with extra filling from the same cause, will cost : for

|                        |          |
|------------------------|----------|
| Eastern block. . . . . | \$28,100 |
| Western do . . . . .   | 15,700   |
|                        | <hr/>    |
|                        | \$43,800 |

Provision is only made in the contract for basement rooms in the two wings of each building ; but by the alterations authorized in the foregoing « order », 24 additional rooms were made available in the basement of the eastern block, and 23 in that of the western block, the largest of which is 504, and the smallest 149 feet area.

The window dressings, windows, arches, doorways, smoke flues, additional chimney-shafts, &c. for these rooms, are estimated to cost : for the,

|                        |         |
|------------------------|---------|
| Eastern block. . . . . | 600     |
| Western do . . . . .   | 3,200   |
|                        | <hr/>   |
|                        | \$6,900 |

A continuous area is to be formed along the south front and rear of each building, to light the basement rooms ; but it was considered better, on the east and west fronts, to make a separate octagonal area for each window.

The walls of these areas are carried up from the rock ; they are faced with Nepean stone, and are to be coped with Ohio stone, and covered with suitable iron gratings along the south and west fronts. They are estimated to cost : for

|                        |         |
|------------------------|---------|
| Eastern block. . . . . | \$5,570 |
| Western do . . . . .   | 4,200   |
|                        | <hr/>   |
|                        | \$9,770 |

Additional number of steps to entrance doors, including side walls to support them, with splayed coping, moulded and chamfered terminations to receive gas lamps &c., will cost : for

|                        |         |
|------------------------|---------|
| Eastern block. . . . . | \$1,210 |
| Western do . . . . .   | 1,100   |
|                        | <hr/>   |
|                        | \$2,310 |

Increased height of *eastern blocks*, as indicated by levels on *block plan*, will cost \$2,370.

The contract provides that « all the stones used in the building, except « otherwise described, are to be of blue limestone of the district, care-  
« fully selected. » But, for the reasons previously stated, sandstone was

substituted for the external facing of the walls. The estimated cost of which is : for

|                        |          |
|------------------------|----------|
| Eastern block. . . . . | \$17,400 |
| Western do . . . . .   | 14,000   |
|                        | <hr/>    |
|                        | \$31,400 |

The cost of works in progress and authorized, connected with the Departmental buildings, exclusive of those under contract, is as follows :

|                                                    |           |
|----------------------------------------------------|-----------|
| Works connected with heating and ventilation . . . | \$146,800 |
| Do do drains and sewers . . .                      | 79,000    |
| Do do additional depth of foundations              | 43,800    |
| Do do alterations of basement . .                  | 6,900     |
| Do do of east end of eastern block .               | 16,820    |
| Do do walls for areas . . . . .                    | 9,770     |
| Do do additional steps &c., &c., .                 | 2,310     |
| Do do do height of eastern block                   | 2,370     |
| Do do facing of exterior walls. . .                | 31,400    |
|                                                    | <hr/>     |
| Total                                              | \$339,170 |

To which is to be added 5 per cent for past and future contingencies, making the amount \$356,128.

#### ALTERATIONS AND WORKS RECOMMENDED.

To render the buildings fire-proof will require the same precautions for the attic floor as provided in the contract for the ground and second floors ; otherwise, the substitution of iron for wood trusses in the roof.

If both were adopted, the structure would doubtless be still more durable and secure.

Iron trusses possess the double advantage over wood of lightness and durability ; and although covering-boards would be necessary, roofs of this class might still be considered fire-proof.

The Contractors offer to substitute iron for wood trusses, and to do all the work required in the alterations, for the sum of \$29,470 over the contract price.

It is, however, believed, that the object would be better accomplished by making the ceiling or attic floor of light joists of rolled iron and con-

crete, as provided for the other floors. The additional cost of which, for both blocks, is estimated at \$17,300.

The specification describes « the whole surface of the flats of the « main roofs to be covered with felt, and laid on with tar and gravel in « the most approved manner, &c. »

This mode of covering any part of the roof, of buildings of this class, appears to be decidedly objectionable. It is therefore proposed that lead or galvanized sheet-iron be substituted :

|                                                    |          |
|----------------------------------------------------|----------|
| Milled lead, 6lbs. to the suppl. foot, would cost, |          |
| about . . . . .                                    | \$29,350 |
| Galvanized sheet-iron would cost . . . . .         | 4,500    |

The plastering, painting, and finishing the additional rooms in the basements of both blocks, is estimated to cost \$4,310.

On comparing the contract plans with the statement prepared for the information of the Architects, in regard to the accommodation required for the Public departments, there appears to be a deficiency of 7 rooms. The latter is, however, stated to fall short of the accommodation now required, by 9 rooms ; so that there are in all 16 rooms, for which no provision has been made. (see appendix F.)

To supply this deficiency, it is proposed to extend the north-east wing of the western block about 34 feet, by adding 17 feet on each side of the central projection. Both the addition and projection to be carried up so as to present a similar appearance to the eastern block.

It is believed that by carrying out this plan, the number of rooms required could be provided at less expense than in any other way.

The probable cost would be \$27,000.

In addition to the alterations above referred to, the Architects recommend the following :

1st. The erection of a tower at the end of the north wing of the eastern block, next the Parliament buildings, as designed before the position of the buildings was changed.

They consider that this feature is required to preserve uniformity of style throughout the structure. This tower, like the rest, is to be provided with tanks for water supply.

It is estimated to cost (over the contract) about \$6,530.

2nd. To substitute British plate-glass for sheet-glass in the inside windows, and that the window-frames be fitted to receive inside blinds, including parting-beads, pulley-styles, &c.

Probable cost \$4,350.



By the contracts, the floors of all the buildings are to consist of boards fastened to strips imbedded in the concrete between the iron joists; a space being left between the concrete and the underside of the boards.

This space, although necessary for the preservation of the flooring, would, in cases of fire, admit of a draught such as would tend to spread the flame.

To guard against all possibilities of this nature and at the same time provide for durability, it would be well to consider the expediency of substituting cement floors throughout for those of boards.

The principal objection raised to floors of this class being coldness to the feet of their occupants, can be fully met by covering them with « *Patent Kamptulicon* ».

This material is made of india-rubber and cork; it is slightly elastic, noiseless, and neither absorbs moisture, nor harbors dust. It is more durable than ordinary floor-cloth, and might be used with advantage in most of the offices, instead of carpets. But where there are hot-air valves in the floors, it would be necessary to protect the *Kamptulicon* by ornamental brass rims.

To substitute cement floors throughout both blocks of the Public Offices, instead of boards as specified, would cost about. . . . \$10,300

Do do for corridors do. . . . \$2,920

To use Ohio stone paving for corridors of both blocks, would cost \$17,490.

To substitute encaustic tile paving in entrance halls for cement flooring, as specified, would cost \$3,220.

The probable cost of cement floors for the Parliament buildings would not exceed \$9,000.

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#### 5th. WATER SUPPLY.

The Corporation of Ottawa, having contemplated the construction of water works for the City supply, it was anticipated that they would have been in operation by the time water service was required for the Public buildings.

No effective measures have, however, been taken for the accomplishment of this object.

It is believed that the Government should at once adopt some means of supply wholly under its own control; and in this view of the case, the Architects of the Parliament buildings were requested to give their opinion on the subject.

These gentlemen recommend pumping by steam from the Ottawa River into tanks placed in the basement of the Parliament buildings; from whence the water is to be raised into cisterns placed in the towers, by the engine provided under the contract for heating and ventilation.

The cisterns in the Departmental blocks being 16 feet lower than the receiving tanks, it is proposed to supply them by means of gravitation; the water to be subsequently forced into the towers, in a similar manner to that described for the Parliament buildings.

The cost is estimated to be \$44,292. (see appendix G.)

There is, however, reason to believe, that to construct works adequate to the required service on this plan, 30 per cent, at least, should be added to this estimate; making the amount, together with the constant expense of fuel, attendance, and future maintenance, decided objections to its adoption.

The obvious advantage of water over steam power in pumping, justifies me in recommending a careful examination of the locality, with a view of ascertaining the practicability of using the water of the Rideau Canal as a motive power in pumping from the Ottawa, for the supply of these buildings.

It is believed that even though a greater outlay was at first required, this plan would eventually prove the most economical that could be adopted.

From the limited information at my command, it seems that for the sum of \$75,000 an ample supply could be provided.

The question is, however, of so much importance, that it would be advisable for the Department to obtain the opinion and estimate of some person, who has made works of water supply his especial study.

*Gas.*—All the main and branch pipes required for the interior of the Parliament buildings, are provided for in the contract, but the leading mains outside are not embraced.

The general mode of lighting and the position of the lights, should, however, be determined, so that proper arrangements can be made either to build in the pipes, or make chases for them in the walls. The principal officers of both branches of the Legislature should therefore be invited to confer with this Department and the Architects on this subject.

No provision having been made in the contract for the Departmental buildings, either for gas pipes or fittings, arrangements should be made for supplying such as are required; but it is not considered that this mode of lighting is generally necessary in the various public offices.

*Bells, &c.*—It is also necessary to determine the general arrangement of bells and speaking tubes required for the different rooms and offices, so that chases can be made in the walls, and pipes laid for them in the concrete floors, as the works progress.

It is believed that the information required for this purpose can be best obtained from the Heads of the different Departments, by addressing them a circular, with a blank form containing the questions to be answered.

Until the extent of *gas* and *bell* service is properly defined, no correct estimate can be given of the probable cost. The amount assumed is \$12,000.

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#### 6th. SUPERINTENDENCE.

By their agreement with this Department, the Architects of the different buildings are to furnish the contractors with all detailed working drawings, and the necessary directions in carrying out the whole design. They are to superintend, and to be held professionally responsible for the proper and satisfactory execution of all the works; to make correct measurements and estimates of the different classes of work done and materials delivered, upon which payments are made to the contractors. They are to advise the Department regularly of the progress and state of the works under their charge.

For the efficient performance of these duties they are to be paid a commission of 5 per cent on the builder's contract price.

There are four Clerks of works employed and paid by the Department, who are instructed to act under the orders of the Architects. Their duties are, to see that none but the best class of materials are used in the buildings, and that the workmanship throughout is well executed; also to keep correct memoranda and measurements of all works, and assist in making out the progress estimates.

Mr. John Morris, the Clerk of works first appointed, was, from his intimate acquaintance with the style of architecture of these buildings, placed in general charge under the Architects, and has continued to act in that capacity up to the present time.

But this system of joint authority, although having some advantages, is found to be in many respects objectionable.

It is, therefore, believed that it would be more satisfactory for each Clerk of works to receive his instructions directly from the Architects.

To admit of these Officers giving a closer attention to the execution of the works, it is necessary that they should be, to some extent, relieved from making out the details of measurements.

With that object in view, it is recommended that a person capable of measuring all classes of works, with a competent assistant, should be appointed.

The duties of the Measurer to extend to both the Parliament and Departmental buildings, and in each case keep separate details of the works, aided by the respective Clerks of works ; both being held responsible for their accuracy.

The Assistant to make out fair copies of the estimates for transmission to the Department, and enter them in the books provided for that purpose. (See appendix H.)

It may very properly be asked : Why is it necessary to make such an appointment, if it is understood by the agreement with the Architects, that they are to perform those duties ?

The answer to this is : The Architects have not done so hitherto, and the likelihood of their attending to them in future is for this reason extremely doubtful.

There is, however, this excuse for them, viz, that about two-thirds of the whole work done has been additional to the contract; and on this, by the « Order in Council », they are to receive no commission.

It is believed that this system of management further requires a competent officer to visit the works at least once every month, and to examine the estimates fully on the spot.

Without some auxiliary supervision of this nature, it seems barely possible that this Department can be in a position to judge of the character of the works, or the judiciousness of the expenditure.

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ABSTRACT OF THE FOREGOING ESTIMATES, &c., SHEWING PROBABLE COST OF  
BUILDINGS.

*Parliament Buildings.*

|                                                                                                   |           |           |
|---------------------------------------------------------------------------------------------------|-----------|-----------|
| Contract amount. . . . .                                                                          | \$348,500 |           |
| To which should be added ;                                                                        |           |           |
| 5 per cent., Architects commission.                                                               |           |           |
| 3 do do Clerks of works and other salaries.                                                       |           |           |
| 10 do do for contingencies. . . . .                                                               | \$ 62,730 |           |
|                                                                                                   | <hr/>     | \$411,230 |
| Works in progress and authorized. . . . .                                                         | \$247,410 |           |
| Do recommended by Architects, &c.                                                                 |           |           |
| Iron roof, Legislative-chambers, and fire-proof<br>ceiling, committee-rooms, &c . . . . .         | \$ 29,800 |           |
| Construction of buttresses, east, north, and west<br>walls, and alteration of skylights . . . . . | \$ 8,000  |           |
| Iron cresting for roof. . . . .                                                                   | \$ 20,000 |           |
| Carving wood cornice in Legislative chambers. \$                                                  | 3,200     |           |
| Strengthening walls of library. . . . .                                                           | \$ 4,500  |           |
|                                                                                                   | <hr/>     | \$312,910 |

*Departmental Buildings.*

|                                                                                                              |           |             |
|--------------------------------------------------------------------------------------------------------------|-----------|-------------|
| Contract amount. . . . .                                                                                     | \$278,810 |             |
| Add 18 per cent as above . . . . .                                                                           | 50,185    |             |
|                                                                                                              | <hr/>     | \$328,995   |
| Works in progress and authorized. . . . .                                                                    | \$356,128 |             |
| Do recommended by Architects, &c.                                                                            |           |             |
| Fire proof ceiling . . . . .                                                                                 | \$ 17,300 |             |
|                                                                                                              | <hr/>     | \$373,428   |
| Covering flats of roof with lead instead of felt,<br>tar, &c . . . . .                                       | \$ 29,350 |             |
| Finishing basement rooms, &c. . . . .                                                                        | \$ 4,310  |             |
| Extension of N. wing of western block. . . . .                                                               | \$ 27,000 |             |
| Erection of tower at N. end of west wing of<br>eastern block . . . . .                                       | \$ 6,530  |             |
| Substitution of plate for sheet glass, inside<br>windows, and fitting windows for inside<br>blinds . . . . . | \$ 4,350  |             |
|                                                                                                              | <hr/>     | \$71,540    |
| Amount carried over . . . . .                                                                                |           | \$1,498,103 |

*Parliament and Departmental buildings.*

Amount brought forward. . . . . \$1,498,103

## HEATING AND VENTILATION.

|                                                                                 |           |             |
|---------------------------------------------------------------------------------|-----------|-------------|
| Contract amount. . . . .                                                        | \$ 61,285 |             |
| Additional cost of system adopted in wings of<br>Parliament buildings . . . . . | \$ 1,500  |             |
|                                                                                 | <hr/>     |             |
|                                                                                 | \$ 62,785 |             |
| 10 per cent for contingencies . . . . .                                         | 6,278     |             |
|                                                                                 | <hr/>     |             |
|                                                                                 |           | \$69,063    |
| Water supply, probable cost. . . . .                                            |           | 75,000      |
| Gas fittings, bells, &c. . . . .                                                |           | 12,000      |
|                                                                                 |           | <hr/>       |
|                                                                                 |           | \$1,654,166 |

Having thus reviewed in detail the various matters referred to me by the « Order in Council » and letter of instructions which precede this report, I beg, in conclusion, to add the following remarks :

1st. That the system of heating and ventilation adopted is on the most approved principles in use for large buildings on this Continent, the carrying out of which has been, from the nature of the materials in which the principal works had to be executed, rendered exceedingly expensive ; and the lowering the plane of the boiler-house floors, considered necessary to the perfect working of the system, has added largely to the cost, and has also greatly increased the outlay for drainage.

2nd. That the unforeseen and unfavorable character of the foundations, previously described, accounts for another large item of expense ; but these facts also lead to the conclusion that it would have been judicious to have ascertained the nature and physical peculiarities of the site at an earlier period.

3rd. The works generally have been executed in a substantial and satisfactory manner, and at moderate rates ; so that although a very large proportion of them are not embraced in the contracts, the Government has received full value for all the outlay.

It is also considered proper to state that, in countries where buildings of the magnitude of those under consideration are comparatively numerous, experience shews that the cost of their construction is almost invariably largely in excess of the original estimates.

If this occurs in carrying out the designs of the most experienced Architects, in places where the nature and properties of all classes of ma-

terials, and every topographical feature of the country have been the subject of the minutest investigation, it can scarcely be expected that in a new country like this, the cost of the erection of Public buildings, unique in point of size and importance, would be less liable to augmentation from unforeseen and unavoidable sources of extra expenditure.

I have the honor to be,

Sir,

Your obedient Servt.,

(Signed) JOHN PAGE,  
Chief Engr., Public Works.

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**No. 46.**

51632.

## APPENDIX TO MR. PAGE'S REPORT.

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### APPENDIX A 1.

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OTTAWA, 7th February, 1861.

The Secretary of Public Works,

SIR,

In the course of my examinations connected with the Public buildings here, attention has been directed, among other matters, to the construction of ducts for the introduction of cold air underneath the warm-air chambers in the different buildings.

A recent conversation with the Architects on this subject, has led to the accompanying letter being addressed to me by Messrs. Stent & Laver, which shews there are 1900 lineal yards, or about a *mile and one tenth* of these ducts connected with the Departmental buildings; and that if they are constructed throughout in the manner they have so far been done in the interior of the buildings, they will cost the sum of \$66,265; but by constructing those outside the building of a good class of rubble-work instead of dressed stone, a saving of \$23,100 would be effected.

I need scarcely say, the saving of this amount on the Departmental buildings alone, is a matter well worthy of consideration; especially when

It is borne in mind that the cost of heating and ventilation of all the buildings will not fall much short of, if it does not exceed \$300,000.

The amount will, however, be stated more correctly in the general report which I have been directed to prepare.

If, in my opinion, this proposed modification of the manner of constructing the ducts, was likely to have any tendency to destroy the efficiency of the system of heating and ventilation adopted, the subject would not have been brought under the notice of the Department in this shape.

But believing the contrary to be the case, I have no hesitation in doing so, for the following reasons :

1st. The Architects inform me that they were referred by the Department to Mr. Garth, of Montreal, in regard to the system of heating and ventilation, construction of air ducts, &c., and that the works connected therewith have been constructed as he required : a statement which there appears no reason to dispute. Nevertheless I feel called upon to say, that although every confidence may be placed in Mr. Garth's abilities and knowledge of matters directly appertaining to his own business, it may fairly be questioned, whether his acquaintance with masonry is sufficiently extensive to warrant his being considered an authority as regards the most economical class suited to any given purpose.

2nd. I am at a loss to know what arrangements have been made with Mr. Garth, viz, whether the Department, by the agreement made with him, are bound to construct air-ducts of such a class of workmanship and materials as he may choose to dictate ; or whether they are to be made of such an area as required to admit a certain quantity of air only.

It will readily be seen that these two conditions differ widely from each other, and that the question whether any change can be made judiciously, depends in a great measure upon them.

Without entering into details, it may be said that although a smooth interior surface for the cold-air ducts is desirable, it does not follow that ducts of a slightly larger sectional area, of a rougher description, would not admit an equal quantity of air ; especially as they could at any time be rendered perfectly smooth by a coating of prepared cement, and still retain an area equal to those formed of dressed stone.

These remarks, taken in connection with the Architect's letter, are considered sufficient to shew the necessity of furnishing me with a copy of the agreement, and also with a memorandum, if any, of any understanding arrived at, verbally or in writing, with Mr. Garth ; otherwise that



the decision of the Commissioner be communicated to me as early as possible. The urgency of the case will be evident, when the Department is informed that a large number of men are at present employed preparing stone, with a view to building both sides and arches of all the ducts of dressed stone.

With a view to facilitate a decision, I will, by next mail, write to Mr. Garth on the subject, and am in hopes that his answer, together with that of the Department, will enable a satisfactory conclusion to be arrived at.

I have the honor to be,

Sir,

Your obedient Servant,

(Signed) JOHN PAGE,

Chief Engineer of Public Works.

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No 47.

APPENDIX A 2.

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Stent & Laver to  
John Page.

OTTAWA, February 6th, 1861.

To John Page Esqr,

Chief Engr.,

Department Public Works.

SIR,

In preparing the estimate of the various works connected with the heating and ventilation, and otherwise on the Departmental buildings, viz, continuation of the memorandums which we had the honor to submit to you on the 20th ult., there are a few points, referring to the cold air ducts, which we wish further to submit.

You are aware that a certain quantity is arranged within the building immediately under the warm-air chambers, and to the same extent in lengths; another portion is arranged to be built separately, as shewn on the accompanying sketch for the eastern block, having terminations with shaft or otherwise, in approved positions in the grounds. Those on the south, in connection with the fence, and in the east and west respectively, in terrace walls and the side of the hill; a third and larger portion is proposed to be constructed in the space excavated for sewers, of which we enclose a sketch, with a view to economy, both in excavation and masonry, as stated in memorandums aforesaid.

A considerable quantity of these ducts within the buildings, and a portion of the separate external ducts near the buildings, are already completed ; but no progress is made towards the building those proposed over the sewers, except that preparations are being made of materials for a portion of them.

We have, as directed by a letter from the Department dated 28th January last, conferred on several occasions with Mr. Garth, the contractor for heating and ventilation, as to the formation of warm-air chambers, warm-air and ventilating flues, cold-air ducts, and otherwise ; the carrying out of which he considered necessary to the full development of his plans, and the satisfactory working of the system of heating and ventilation, proposed by him and adopted by the Department.

The material of which the cold-air ducts are built and proposed to be continued, is Trenton limestone ; the size being about 3 feet wide, and 4 feet high ; having solid cut-stone sides, and arched over with similar material ; the paving of Nepean stone flagging. This description of work is required to form the duct with a smooth and even surface, to assist the passage of air and consequent ventilation, and, by being built in block-stone with close joints, to resist the tendency of damp from the outside, and the action of frost within.

We find the quantity required by the plans will be about 1900 yards in length, the probable cost of which, if throughout of a like class, will amount to (\$66,265) sixty-six thousand, two hundred and sixty-five dollars, exclusive of excavation ; and whilst we admit the desirability of adopting the mode of construction referred to within the buildings, and in the separate ducts externally, we are of opinion that a less costly mode of building may be adopted for this purpose to those proposed to be built within the area excavated for drains ; excepting 30 to 40 feet in length from the mouth inwards, to protect against frost.

Our proposal is to construct them of good rubble masonry, arched over with the same description of material, and to have them carefully pointed with good mortar or cement ; by which a saving of about (\$23,100) twenty three thousand, one hundred dollars would be effected, in comparison with the class of work of which those in the interior are constructed.

Should it be considered that the inequalities of the surface will retard the passage of air, and impede the successful working of the system, we are of opinion the number of ducts is fully equal to any demand likely to

be made on them, even with the contingency ; but if otherwise, the size may be increased in such a degree as to obtain the same supply, under the altered circumstances of their construction.

We have the honor to be,

Sir,

Your obdt. Servts.

(Signed) STENT & LAVER.

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No. 48.

APPENDIX A 3.

J. Page to C. Garth.

OTTAWA, 7th February, 1861.

Charles Garth, Esq.,  
Montreal.

DEAR SIR,

On going over the estimates relating to works connected with heating and ventilation of the Public buildings here, I find they amount to so large a sum, that it appears to me desirable to ascertain whether it is possible to diminish the expense, without detriment to the system adopted.

With that object in view, it has been suggested that a considerable saving would be effected by constructing the further extension of the cold-air ducts of a good class of rubble masonry.

I am therefore desirous of having your opinion on this question, before further action is taken, and beg to submit it for your consideration in order following, viz :

1st. What influence, if any, would it be likely to have on the system of heating and ventilation proposed, if the cold air ducts outside of the buildings were constructed of an ordinary good class of rubble masonry, the inequalities on the surface of which might be assumed at from one inch to one inch and a half in depth ?

2nd. Would such a class of wall, in your opinion, be likely to retard the passage of air through the ducts ; and if so, in what proportion to the area of the openings, and to what depth from the sides of the ducts ?

3rd. If walls of this class were built, would the ducts require a greater sectional area ; and if so, how much ?

Lastly. Do you see or know of any objections to the ducts for the introduction of cold air being built of rubble masonry, instead of dressed stone ; and if so, please to state them ?

Your early reply to the foregoing, coupled with any suggestions you may see fit to make, will oblige

Your obedient Servant,

(Signed) JOHN PAGE,  
Chief Eng., Public Works.

P. S.—I have informed the Department of Public Works of this application having been made to you.

(Signed) JOHN PAGE.

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No. 49.

APPENDIX A 4.

C. Garth to J. Page.

MONTREAL, 13th February, 1861.

John Page Esq.

Chief Engineer Public Works,  
Ottawa, C. W.

DEAR SIR,

Your favor dated the 7th February, only came to hand this day, being detained, I suppose, by the snow storms.

I received a telegraph from Messrs. Fuller and Jones on the 6th instant, to know if the sides and arches of the cold-air ducts would answer, if built of ordinary rubble masonry ; my answer was, " if well and smoothly built they will answer." I have just now received your telegraph, and have answered to the same effect. My reasons for agreeing to the proposed change are :—in calculating for the area required, I allowed for something more than I absolutely wanted ; and as the change from dressed stone to rubble masonry causes principally extra friction, I find that I have allowed sufficient for that : therefore in answer to N°. 1 question : the difference in the *extra friction*, for which I find I have sufficient area to allow for it.

In answer to question N°. 2 : such walls will retard the passage of the air through the ducts, to the extent of about  $\frac{1}{3}$  their total area. In answer to N°. 3 : such walls, built in cold-air ducts, would require a greater

sectional area than if built of dressed stone, to the extent of an  $\frac{1}{4}$  of their area.

The only objections that I have to rubble masonry instead of dressed stone for air-ducts, are: 1st the extra friction; 2nd, the hoar-frost which accumulates more or less in cold-air ducts, and adheres more to a rough than a smooth surface, thereby diminishing the area of the ducts; 3rd, after a while the mortar falls from the joints in the rubble masonry, making the wall rougher, and consequently causing additional friction. This latter objection might be obviated by pointing the walls with cement instead of mortar.

As a general rule, there can be no objection to making the air-ducts large.

Therefore, should you adopt rubble masonry, it might be advisable (where you conveniently can) to increase the area of the ducts.

I will be prepared with the report and estimates that I promised you when in Ottawa, which I will give you when you come here. If you will let me know when you expect to be in Montreal, I will take care not to be absent. In the mean time I remain,

Yours respectfully,

(Signed) CHARLES GARTH.

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No. 50.

35696.

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APPENDIX A 5.

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QUEBEC, 15th February, 1861.

SIR,

With reference to your communication of the 7th instant, relative to the construction of ducts for the introduction of cold air underneath the warm-air chambers in the various public buildings at Ottawa; and enclosing a letter of Messrs. Stent & Laver on the subject: I am directed to furnish you with the enclosed copy of the Deputy Commissioner's report thereon, and to inform you that the Hon. the Commissioner approves of the same, and directs your attention to it.

(Signed) T. TRUDEAU,  
Secretary.

John Page, Esq., Chief Engr.  
Public Works, Ottawa.

**No. 51.**

## APPENDIX A 6.

Back 51632.

The Commissioner,

Copies of the contract were sent to the Architects and Clerk of Works last week, 5th February. Doubtless Mr. P. has one ere this. There is no stipulation in it as to the manner of finishing the masonry, and nothing further in regard to its character than the plans with the Architects will shew. I consider the Department free to adopt what class of masonry it chooses, provided the full free area of the ducts is preserved; and that it was the duty of the Architects to adopt the most economical class, consistent with the efficiency and durability of the work. The Chief Engineer should be instructed to give such directions to the Architects, in reference to the extent and mode of construction of these cold-air ducts as, after obtaining the views of the Contractor for heating and ventilation, he may consider necessary, in regard to their efficiency and economy of construction, without disturbing the conditions of his contract.

(Signed) S. KEEFER.

12th February, 1861.

**No. 52.**

## APPENDIX A 7.

J. Page to  
Stent & Laver

OTTAWA, 13th February, 1861.

Messrs. Stent & Laver,  
Architects.

GENTLEMEN,

In reply to your letter of the 6th instant, drawing attention to the extent of the cold-air ducts connected with the heating and ventilation of the Departmental buildings, and plan of their construction, and suggesting a more economical mode of proceeding with their extension outside of the buildings,

I have the honor to inform you that after carefully considering the subject, I am of opinion that the plan of construction recommended in your letter could offer no obstruction to the passage of air through the ducts, but what can be fully met by a slight increase of their sectional area; and therefore request that you will at once take the necessary steps

to stop all expenditure on works connected with the ducts, other than those required to carry out the mode of construction intimated in the letter above referred to.

That is to say, that the sides and arches of the ducts, where they extend much beyond the respective lines of the buildings, are to be formed of a good class of coursed rubble masonry (laid, if need be, in cement mortar, for 9 inches or a foot back from the face of the walls) ; except that the outer end of each, for a distance of 30 feet, may consist of dressed stone, of a similar class to those used for such parts of the ducts as are in the interior of the building.

I have the honor to be,

Gentlemen,

Your obedient Servant,

(Signed) JOHN PAGE,  
Chief Engr., Public Works.

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No. 53.

J. Page to  
Fuller & Jones.

APPENDIX A 8.

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OTTAWA, 13th. February, 1861.

Messrs. Fuller & Jones.

GENTLEMEN,

The mode of constructing the ducts for the introduction of cold air to the Parliament buildings having recently occupied my attention, I have the honor to inform you, that after carefully considering the subject, I am of opinion that if the ducts, where unconnected with the side walls of the buildings, were formed of a good class of rubble masonry, a considerable saving would be effected without injury to the works ; and moreover that no obstruction would be presented to the passage of air through them, but what could be fully met by a slight increase of their sectional area.

I beg therefore to request that you will at once take the necessary steps to stop all expenditure on works connected with the ducts, other than those required to carry out the plan of construction intimated. That is to say, that the sides and arches of the ducts, where unconnected with the walls of the main buildings, or extending much beyond them, are to

be formed of a good class of coursed rubble masonry (laid, if need be, in cement mortar, for 9 inches or a foot back from the face of the walls) ; except that the outer end of each duct, for a distance of 30 feet, may consist of dressed stone, of a similar class to those used for such parts of them as are already built.

I have the honor to be,

Gentlemen,

Your obedient Servant,

(Signed) JOHN PAGE,  
Chief Engr. Pub. Works.

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No. 54.

APPENDIX A 9.

Fuller & Jones  
to J. Page.

PARLIAMENT BUILDINGS,  
Ottawa, 16th February, 1861.

To J. Page, Esq.,  
Chief Engineer, Public Works,  
Sir,

We have the honor to inform you that immediately upon the receipt of your favor of the 13th instant, we sent an order to the Contractor not to proceed with further preparations of picked face stones for the sides and arches of the ducts for cold air, and beg to enclose a copy of the Contractor's reply. You will perceive that he has 15,718 feet of ashlar, and 7,814 feet of arch-stones ready. This quantity has been prepared without instructions from us. We find that about 11,000 feet only will be required to complete the sides of the ducts, and 8100 feet for the arches. As the requisite quantity for the latter is so nearly complete, we presume that the arches will have to be finished with cut stone, but we shall await instructions from the Department before we give any further order.

We have the honor to be,

Sir,

Your obedient Servants,

(Signed) FULLER & JONES,  
Architects.



**No. 55.**

**T. McGreevy to  
Fuller & Jones.**

**APPENDIX A 10.**

CONTRACTORS' OFFICE,

15th February, 1861.

Messrs. Fuller & Jones,  
Architects,  
Parliament Buildings, Ottawa.

GENTLEMEN,

I am in receipt of your order of the 14th instant, requesting me « not to prepare any more cut stone either for sides or arches of ducts. » In answer I beg to inform you I have complied with your request, and herewith I send a memorandum of cut stone, ready to set in ducts on the opening of the works in the spring, viz, 15,718 feet of ashlar, and 7814 feet of arch; and I further beg to state that I have an agreement with parties for the whole quantity required, which I made some months past.

I have the honor to be,

Yours,

THOS. MCGREEVY,  
per ROBERT H. MCGREEVY.

**No. 56.**

**J. Page to Sec'y.  
of Public Works.  
51074.**

**APPENDIX B 1.**

MATILDA, 29th December, 1860.

The Secretary of Public Works.

SIR,

Having deemed it expedient to deviate in some respects from the course intimated by the Department, in reference to matters connected with the Public buildings at Ottawa, it is proper to state that in doing so I have been guided by circumstances which appeared to me could be best met by endeavoring to obtain information directly through the Architects and local officers, keeping the responsibility of measurements, details &c. upon them,—at least in the first instance.

Believing that the object of my visit would be best promoted by this course, I addressed a letter to the Architects of the different buildings, a copy of which is hereunto appended along with the reply of both parties.

From the letters it will be seen that some of the details are in course of preparation, and I have reason to believe that such others will be furnished, as will, together with a thorough examination of the works &c., enable me to place the various questions in a more satisfactory position before the Department.

I beg, however, to draw the Hon. the Commissioner's attention specially to the explanations given by the respective Architects regarding the schedule of rates appended to the contract.

It is no doubt true, as stated, that these rates are by no means proportionate to the value of the work ; still it is to be feared that the necessity of deviating from them may be attended with unpleasant results, not only from such a course being contrary to practice and the heading of the schedule, but from the dissatisfaction it may cause (not unreasonably) to persons who in the first instance « tendered » according to form for the works.

It being presumed that a decision on the subject has been arrived at (and it certainly is very desirable to have the matter placed on a more satisfactory footing than the letters of the Architects represent it to be at present), I beg respectfully to suggest the expediency of authority being officially granted for the change, before further action is taken relative to the value of the different classes of extra work.

Trusting to hear from the Department on this subject, as early as circumstances will admit,

I have the honor to be,

Sir,

Your obedient Servant,

(Signed) JOHN PAGE,

Chief Engineer Public Works.

P. S. Address me at Ottawa,

(Signed) J. PAGE.

No. 57.

J. Page to  
Stent & Laver.

## APPENDIX B. 2.

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OTTAWA, 20th December, 1860.

Messrs. Stent & Laver,  
Architects Depart. buildings.

GENTLEMEN,

Preparatory to carrying out the instructions given me by the Government relative to the works connected with the Departmental buildings now in progress of construction under your management, I have had occasion to examine the monthly progress estimates; and find that the rates allowed for works alleged to be « extra » of the contract do not agree with those in the schedule of prices appended to the contract itself. Will you therefore please inform me why and under what authority this has been done?

I beg at the same time to draw your attention to the necessity of preparing cross and longitudinal sections of all excavations, masonry, and other works done up to the present time, having reference to a fixed datum line, and so arranged as to be readily understood, and so that contract and additional work can be distinguished from each other.

These should, of course, be accompanied with such calculations, based upon dimensions obtained from actual measurement, as are necessary to determine the correct quantities of the different classes of work.

It is scarcely necessary to say that from the nature of your agreement with the Department of Public Works, you are expected to furnish this information, and that it is desirable you should do so as early as circumstances will admit.

I have the honor to be,

Gentlemen,

Your obedient Servant,

(Signed) J. PAGE.

Chief Engr. Pub. Works.

**No. 58.**

**J. Page to  
Fuller & Jones.**

A copy of the foregoing addressed to Messrs. Fuller & Jones, Architects for the Parliament buildings.

(Signed) J. PAGE.

**No. 59.****APPENDIX B 3.**

**Stent & Laver to  
J. Page.**

OTTAWA, December 24th 1860.

SIR,

We received your favor of the 20th instant, and in reply to the question, Why prices allowed for « extra work » on the Departmental buildings are higher than those of the schedule appended to the contract ? we beg to state that this question formed the subject of considerable correspondence between the Department and ourselves during the months of February and March last, and that we have understood from the commencement of the work that these schedule prices (many of which are far below the value of the several classes of work enumerated) should not apply to « extras », and we received the verbal sanction of the Hon. the Commissioner for substituting, in their stead, fair current rates, which we have in all cases done.

We have applied to the Hon. the Commissioner to have the clause referring to prices for « extra work » at the head of the schedule altered, said schedule having been prepared by the respective Architects and Clerk of works to adapt especially for progress estimates to Mr. McGreevy's original contract sum for all the buildings ; no schedule having been prepared by him, and the schedule of the present contractors, Messrs. Jones, Haycock & Co., not having been accepted by the Department for this purpose. It was not, however, intended to apply it to the valuation of extra work.

Referring to sections of excavation and masonry which you require, we have accurate measurements of every class of work which has been done, and the various levels from which such measurements have been taken, (said levels being adopted by an Order in Council and com-

municated to us by a letter from the Department on February 1st.) and we had arranged to have them carefully plotted during the winter.

We shall be happy, however, to prepare them for your inspection and guidance, and will proceed to it without delay.

We understand that our arrangement with the Department requires us to perform all the services incident to the practice of the profession, and this embodies a guarantee for the correctness of the measurements and calculations made upon the work during its progress and at its completion ; but we shall at all times feel pleasure in furnishing the Department with such detailed information as they may consider it desirable to obtain.

We have the honor to be,

Sir,

Your obedient Servants

(Signed) STENT & LAVER.

John Page, Esqr.

Chief Engineer,

Dep. Pub. Works.

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**No. 60.**

Fuller & Jones  
to J. Page.

**APPENDIX B. 4.**

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*Original sent to Department on 26th December, 1860.*

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PARLIAMENT BUILDINGS,

Ottawa, 22nd December, 1860.

J. Page, Esq.,

Chief Engineer, Public Works.

SIR,

In reply to your favor of the 21st instant, requiring information as to our authority for deviating from the schedule of prices in allowing « extra work », we beg to state that at an interview with the Hon. the Commissioner of Public Works, we were requested to put a fair valuation upon all work done in addition to the contract, and at the same time informed that the clause at the commencement of the schedule was incorrect so far as regards « extra work ».

We also beg to inform you that the sections &c. of excavation and foundations are being proceeded with, and shall be completed with as little delay as possible.

We shall at all times be happy to render you any information in our power respecting the works under our superintendence.

We have the honor to be,

Sir,

Your obedient Servants,

(Signed) FULLER & JONES.

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No. 61.

APPENDIX B. 5.

35208.  
Sec'y. of P. Works  
to J. Page.

DEPARTMENT OF PUBLIC WORKS,

Quebec, 9th January, 1861.

SIR,

The attention of the Honorable the Commissioner has been called to your letter of the 29th ultimo and the accompanying communications of the Architects of the Ottawa buildings, in which it is stated that the rule followed by them for estimating extra work in favor of the Contractors, was adopted in consequence of verbal communication with the Commissioner, and that they have accordingly allowed a fair value, according to current rates, for such extra work.

In reply I am to state that at no time, either in regard to these or any other contract, has the Commissioner admitted the principle of sanctioning by verbal communication a departure from their written terms. It is quite possible that he may have expressed in general terms his view of the fairness both to the Contractors and Department of paying for extra work according to its actual value, but the Architects must be well aware that it was not in the power of any Public Officer verbally to authorize, and that it would have been altogether irregular for them to have accepted any verbal authority for, a deviation from the written terms of a contract. The Architects were informed at the outset that the responsibility of the estimates rested with them;—a responsibility which was properly incident to the position which they accepted.

If they have made any estimates otherwise than as provided by the contract, the explanation is still due you, and the propriety or otherwise of their doing so comes within the legitimate scope of your enquiry.

The Commissioner learns from the Deputy Commissioner that the words in the schedule of prices referred to by the Architects have been brought under his notice, and your attention is directed to the observations of the Deputy with reference to the justice of applying the schedule prices to extra work. Setting aside all impressions derived from verbal communications, the Commissioner considers that as a general rule of equity and justice, work not embraced in a contract should be paid for at its fair value, whether such a value exceed or fall short of the contract rate. The expression of his opinion is not intended in any way to control your course of action if your own judgment is opposed to it, or if the contracts themselves were intended to impose a different rule on the parties.

To prevent any misapprehension for the future, you will be good enough to intimate to the Architects that no deviations from the contract can be made without written authority, which may remain of record in the Department.

I have the honor to be,

Sir,

Your obedient Servant,

(Signed) J. W. HARPER,  
for Secy.

John Page, Esq.,  
Chief Engineer of Public Works,  
Ottawa, C. W.

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No. 62.

APPENDIX B. 6.

Dpty. Commissioner.  
Back 51074.

To the Commissioner,

In all the communications with the Contractors prior to the signing of the contracts, respecting the arrangement of the terms and conditions to be embodied in them, it was always understood and conceded that the schedule of prices which had been prepared by the Architects for the

purpose of being attached to it and forming the basis whereon the monthly progress estimates for contract work were to be made, should not apply to or govern any extra work not included in the contract.

That this schedule of prices was afterwards attached to and made part of the contract, without first striking out of the heading of it—the words « and also for extras »,—was entirely an oversight and a mistake, in respect of which it would be manifestly unjust for the Department to take advantage. To do so when it is admitted that the prices are unremunerative, would not only be at variance with what is just and right, but would be contrary to the meaning and intention of the last clause of the contract, which covenants that « if any additions shall entail extra expense on the Contractors, the same shall be allowed them ».

The contract work is to be paid for in the monthly estimates *on the basis of the schedule of prices* as provided under the first clause of the 13th section of the contract. Any extra or additional work should, in my opinion, be paid for at its fair value upon the estimate of the Architects, approved by the Chief Engineer of this Department.

(Signed) S. KEEFER.

January, 1861.

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No. 63.

APPENDIX C. 1.

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45065.  
Fuller & Jones  
to Com. of P. Works.

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OTTAWA, 27th January, 1860.

SIR,

When the contract drawings were made for the Parliament buildings, Ottawa, the time allowed was so very brief that we could not by any possibility personally visit any of the quarries in this neighborhood, nor could we obtain any reliable information respecting the nature of sandstone, and consequently were obliged, in order to complete our plans and specifications by the day named in your instructions, to specify the native limestone for the external facing of the walls. That this limestone would make sound and durable work if the stones were carefully selected, there can be no doubt ; but the color being grey the general effect would be, in any style of architecture, sombre.



We have been most anxious to find some other stone lighter in color and of equal durability, and have for some months been making enquiry and obtaining specimens of the sandstone in the neighborhood; and as those from the rocks at Napean and Templeton appeared to us the most suitable, we have personally inspected them both, and have the honor to lay before you a brief report thereon, together with an estimate of the entire cost incurred by their use.

The stone at Napean is light in color, very hard, but found in layers of from three to fifteen inches in thickness; the beds are so level and true and the stones break so readily in a vertical joint, that little or no labor would be required: this we beg to recommend for the rubble facing.

The stone at Templeton is richer in tone of color, but is found in larger blocks and not so regular in bed or joint, therefore not so available for rubble walling. The quoins, plinth, and relieving arches are specified in the contract to be of native sandstone subject to the selection of the Architects, and we propose using Templeton stone on account of its rich color for this purpose.

The effect produced by the varied tints of Templeton stone for quoins &c., the Napean stone for the rubble facing, and the Ohio stone for the dressings of windows and doors &c., would be very pleasing and would add far more to the appearance of the building than could be produced by an outlay of ten times the amount in ornamentation by moldings, carvings, &c.

We find that the extra cost that would be incurred by substituting Napean sandstone rubble masonry for limestone would be \$15,400.

Napean is ten miles from the site, and the haulage becomes, therefore, a very heavy item. The Templeton quarry is about four miles, and would therefore be somewhat cheaper, but the stone is not so well adapted for rubble work.

In this calculation of cost we have allowed the Contractor twenty-two cents per foot in addition, and that, we consider, affords him a fair and liberal profit, according to the prices at which we are assured the stone can be obtained.

We are extremely anxious that these buildings should present an appearance as effective as possible, without the least unnecessary expenditure, and would not recommend this addition were we not firmly convinced that the result would fully justify the expenditure.

We hope that after due consideration of the subject, you will authorize us to give the requisite order to the Contractor.

It is of great importance that he should have it as soon as possible, in order that we may make all the necessary arrangements for hauling during the winter.

We have the honor to be,

Sir,

Your obedient Servants,

(Signed) FULLER & JONES,  
Architects.

The Honble. Commissioner,  
Public Works.

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No. 64.

APPENDIX C. 2.

45562.  
Sir W. Logan  
to Deputy.

—  
MONTREAL, 18th February, 1860.

MY DEAR SIR,

I am in receipt of your letter of the 15th instant, respecting sand-stone. So long ago as 1852, when reporting on that part of the country which includes Beauharnois, I made particular mention of the Potsdam formation as a source of excellent building material. There is no question of the great durability of most of the beds belonging to it, and when such portions of it are selected as are free from iron, there is little doubt of its architectural value. Some of the beds, in general those towards the top of the formation, are of sufficient purity to yield an excellent material even for glass making, and these would afford the handsomest building stones.

One of the characteristics of the stone, besides its power of resisting atmospheric influences, is its capability of enduring great heat without injury. If an edifice built of it were destroyed by fire, the walls would still continue sound, and the renewal of the wood work is all that would be required to re-establish the edifice. It appears to me probable, that if it were used in a public building it would afford an example that would induce private persons to have recourse to it for their purposes, and accidents from fire would not produce so complete a loss as they do now, from the almost exclusive application of limestone.

I sent Mr. Haycock a list of five localities where the stone could be

obtained on the Ottawa, the two most convenient for the best kind being Presqué Isle, about fifty miles below the city, and the other the lots 27, 28, 29, ranges 5 and 6 of Napean. The stone of these localities would in my opinion be most enduring material. The Malone stone so well known, to which you allude, as, perhaps, you are aware, is from the same geological formation, and it would afford me much satisfaction that a stone resembling it should be used for the Public buildings at Ottawa.

It is to be regretted that you should feel yourself compelled to go out of the country for any of the materials to be used. There is a very beautiful free stone at Pembroke which would be an excellent material for the carved work, but I fear the convenience of carriage is scarcely yet sufficient to enable it to be brought to Ottawa at such a price as would be considered within the limits of a proper economy. This sandstone is of the chazy division of the lower silurian rocks. The beds to which it belongs follow the Ottawa in a general way from Pembroke to Grenville ; but I have nowhere, lower than the neighborhood of Pembroke, seen the courses of sufficient measure to give blocks of more than from three to six inches. I have, however, given Mr. Haycock thirteen localities of these beds ; he may be inclined to look at some of them. Pieces measuring a few cubic inches look remarkably well when dressed.

A specimen which Mr. Cumberland put in my hands with N°. 3 upon it, saying that it came from your Department, must be from one of these thirteen localities.

There are some good pure dolomites on the coast of Lake Huron at Inverhuron, which could be loaded with facility into lake craft. There are also the dolomites of Rockwood and Pulinch, which have been used in the viaducts of the Grand Trunk Railroad and are within reach of railroad carriage. All these would afford material that could easily be dressed and carved. No doubt you are aware that the stone chosen for the new Parliament buildings in Great Britain by a committee appointed by the Government is a dolomite. Being less soluble than limestones, dolomites resist atmospheric influences better, and are therefore more durable. Whether the carriage from the localities above named would be more than from Cleveland, you are better able to judge than I am.

I am my dear Sir,

Very truly yours,

(Signed) W. E. LOGAN.

Samuel Keefer, Esq.,  
Quebec.

**No. 65.****APPENDIX C. 3.**

45864.

Deputy to  
Commissioner.*Facing the public buildings at Ottawa with sandstone.*

QUEBEC, 28th February, 1860.

SIR,

Upon the question of facing the public buildings at Ottawa with sandstone throughout, instead of using it only for the dressed work, and limestone for the rubble facing as provided in the contract, the following communications recommending the change have been received.

1st. The report of Messrs. Stent & Laver, Architects of the Departmental buildings, dated 25th January, 1860.

2nd. The report of Messrs. Fuller & Jones, Architects of the Parliamentary buildings, dated 27th January, 1860.

3rd. Report of Mr. John Morris, Clerk of the Works of both buildings, dated 22nd February, 1860.

4th. Letter of Sir William Logan, Provincial Geologist, dated 18th February, 1860.

From these reports it appears that the persons best informed on the subject recommend the use of sandstone in place of limestone for the facework, in the strongest and most unqualified terms. The stone which they particularly recommend is that found in Napean, ten miles from the city, in regular stratified courses, varying from two to sixteen inches in thickness, similar in character and quality to the Potsdam sandstone of Malone in the state of New-York, and of the same geological formation.

Sir William Logan says: «one of the characteristics of this stone, «besides its power of resisting atmospheric influence, is its capability of «enduring great heat without injury. If an edifice built of it were destroyed by fire, the walls would still continue sound, and the renewal of «the woodwork is all that would be required to re-establish it » ; and of the particular quarry referred to in Napean, he says that it is «in his opinion a handsome and most enduring building material. »

The Architects and Clerk of Works all concur in the opinion that its architectural effect would be infinitely superior to the dull colored limestone, the general effect of which, in any style of architecture,

would be sombre ; while on the other hand, the light colored sandstone of Napean, relieved by the richly tinted Templeton stone in the manner pointed out, would add far more to the appearance of the buildings than could be produced by an outlay of ten times the amount in ornamentation by moldings and carvings, and would have the additional charm of being in harmony with the style adopted.

I fully agree with these gentlemen in the opinions they have expressed in regard to the superior fitness of the sandstone, in respect both to its durability and architectural effect ; and had there been time for a more thorough examination of the quarries in the neighborhood of Ottawa before the plans and specifications were matured, the question of using the sandstone in preference to the limestone would in all probability have been settled in favor of the former, before entering into contract ; but the contract is so drawn as to provide for the change, should it now be considered advisable. The limestone was admitted in the face work purely from motives of economy.

I may here remark that the plans for the Governor General's residence, on which tenders are to be received on the 10th proximo, provide for facing the walls with sandstone throughout, and if the Parliamentary and Departmental buildings were faced in like manner, all the Public buildings in Ottawa would then harmonize better in appearance, be really more secure against fire, and better adapted to resist atmospheric influence.

The only point then remaining to be considered is the cost. The Clerk of works, it will be seen, has gone minutely into this question, and his estimate of the extra expense for superficial foot corresponds as nearly as possible with that of the Architects. His estimate is 21 cents ; Messrs. Stent & Laver, 20 cents ; and Messrs. Fuller & Jones, 22 cents, in all the rubble facework of the buildings. But in the quantity of facework in the Departmental buildings he differs materially from the estimate of Messrs. Stent & Laver, and slightly from that of Messrs. Fuller & Jones for the Parliamentary.

The Architects estimates are : Messrs. Fuller & Jones,

Parliamentary, 70,000 sq. feet @ 22 cents . . . \$15,400

Messrs. Stent and Laver, Departmental, 128,500 sq.

feet @ 20 cents . . . . . \$25,700

Total. \$41,100

The Clerk of works estimate is, for the Parliamentary,

|                                                  |                 |
|--------------------------------------------------|-----------------|
| 73,000 sq. feet @ 21 cts. . . . .                | \$15,330        |
| Departmental, 100,000 sq. feet @ 21 cts. . . . . | <u>\$21,000</u> |
| Total                                            | <u>\$36,330</u> |

I am inclined to consider the latter estimate the most correct, and that it represents, as nearly as possible, the precise value of the extra work of facing with sandstone rubble in place of limestone ; and although the same may appear a large one, it is but six per cent. on the outlay, and I am clearly of opinion that the change is worth it, and that it ought now by all means to be made. For in Public buildings of such magnitude and importance as these, to be rendered fire-proof at considerable extra expense and therefore destined to be lasting, they will represent to posterity the state and condition of the arts and sciences in Canada at the present day ; and with this consideration in view, a saving of six per cent. by the adoption of an inferior material would scarcely seem to be warranted.

All of which is respectfully submitted by,

Sir,

Your obedient Servant,

(Signed) SAMUEL KEEFER,  
Deputy Comr. Public Works.

No. 66.

APPENDIX C. 4.

45533.  
J. Morris to  
Commissioner.

OTTAWA, 22nd February, 1860.

SIR,

I have the honor to acknowledge the receipt of your communication of the 15th instant, wherein I am requested to furnish you with my views of the quality of the Napean and Templeton sandstone, its architectural effect and durability as compared with the limestone, and my opinion as to the difference of cost. In reply thereto I beg to report, that as both the Napean and Templeton stones are of the same geological formation, being the Potsdam of the New York State Geologists, the following remarks, with the exceptions which are noticed below, will apply equally to both quarries.

The Napean stone is very regularly laminated in thicknesses from two inches upwards to the thickest known bed, which is sixteen inches. The three most valuable beds for the facing of the Government buildings are the 5 inch, 6 inch, and 10 inch; all these are of a very uniform and agreeable light warm buff tint; the thick bed is more or less tinged with yellow or pink stripes; all the beds are equally hard.

The Templeton stone, so far as at present known, appears to indicate two varieties; the one an extremely hard reddish brown sort which rises in thick beds, but is clearable. This variety appears to extend over the whole outcrop of the rock, and to be from ten to fifteen feet thick in several beds; below this there are indications of a light colored and much softer stone. The color of this variety is much the same as the Napean stone, and is I believe much more *lamellar* than the upper portion of the rock.

As Mr. McGreevy has a number of men employed in opening a quarry for the purpose of testing the supply and quality of the stone with a view to the use of it for quoins &c. as provided by the specification, further information will be shortly gained with regard to this stone.

With regard to the architectural effect of these stones, (in my opinion) a comparison can scarcely be instituted between them and the local limestone, the difference being so vastly in favor of the sandstone, particularly in the adopted style of the Government buildings; and if used with judgment, I believe that if (subject to the question of durability as will be hereafter noticed) the dark stone of Templeton should be used for the «facing rubble» of the plinth and for quoins, and the light colored Napean stone for the «facing rubble» of the remainder of the exterior, the effect would be much richer than that produced by magnesian limestone used in the Imperial Houses of Parliament, and would have the additional charm of being in accordance with the style adopted.

As all calcareous stones are easily soluble, they are therefore more affected by atmospheric changes than silicious stones like those under consideration.

The action of fire upon quartzose rock, such as the Potsdam sandstone, will tend to harden or vitrify it, and it is therefore frequently used for furnaces and ovens; the same description of rock was formerly used to furnish the silex for the «Ottawa glass». It is needless, perhaps, to remark that action by fire upon limestone is utterly destructive; the recent fire at «McKay's mills» in this city has burst the whole of the quoins

to such an extent as to necessitate the entire rebuilding of the walls, which might otherwise have been saved. As, therefore, neither atmospheric changes nor the action of fire upon the silicious Potsdam rock is so injurious as upon the calcareous or limestone rock, it follows therefore, in my opinion, that the comparison is altogether in favor of the former.

I should, however, state that I have some doubt as to the continued effect of the atmosphere upon the oxide of iron which has evidently been the cause of the color of the Templeton stone, and in so far has created a suspicion that the Templeton variety may not be so durable as the Napean ; but I must add that the rock appears to have been exposed without injury for many years.

As cartage is the chief item in the difference of cost, it is only necessary to consider the distances of both descriptions of stone. The nearest reliable quantity of limestone for facing is that obtainable from the Gloucester and Hull quarries, each about  $3\frac{1}{2}$  miles from the « Barrack Hill » One team of horses can draw from either quarry 3 loads of 12 cubic feet each, the total distance for one team would be therefore 21 miles per day ; the hire of each team will not average less than \$2.50 cts. per day or 75 cents per cubic foot, The distance of the Napean stone is a little more than 10 miles from the « Barrack Hill ». One team of horses can draw one load of 12 cubic feet going over the same number of miles as the team to the Gloucester quarries ; the hire of the team would be the same, and the cost per cubic foot will be 21 cents. The cost of quarrying the sandstone is also a little more expensive than upon limestone, caused by the extra quantity of tool sharpening &c.

The following tabular form will afford a ready comparison of cost.

| LIMESTONE.                    |           | SANDSTONE.                      |           |
|-------------------------------|-----------|---------------------------------|-----------|
|                               | cts.      |                                 | cts.      |
| Cost of stone per cubic foot. | . 01      | Cost of stone per cubic foot.   | . 01      |
| “ of quarrying. . . . .       | . 03      | “ quarrying. . . . .            | . 04      |
| “ of cartage. . . . .         | . 07      | “ cartage. . . . .              | . 21      |
|                               |           | “ tollgate . . . . .            | . 01      |
|                               | <u>11</u> |                                 | <u>27</u> |
|                               |           | deduct . . . . .                | . 11      |
|                               |           |                                 | <u>16</u> |
|                               |           | Add 20 per cent on extra outlay | . 03      |
|                               |           | Minimum difference of cost      | . 19      |



I think the Contractors should, however, be allowed some margin in the change proposed, to cover any unforeseen cost that may arise out of the circumstance of the adoption of a material not heretofore used in the neighborhood, and in opening new quarries and making roads, &c.

From one to three cents may be allowed in addition, making say 21 cents as the increased cost per foot of cubic measure.

|                                                                  |          |
|------------------------------------------------------------------|----------|
| The total quantity of facing in the Parliamentary buildings is   |          |
| 73,000 cubic feet at 21 cents per foot. . . . .                  | \$15.330 |
| Of this stone, the total quantity of facings in the Departmental |          |
| buildings is 100,000 feet at 21 cents per foot . . . . .         | 21.000   |
|                                                                  | <hr/>    |
| Total extra cost on both buildings . . . . .                     | \$36.300 |
|                                                                  | <hr/>    |

The Templeton quarry is nearer to the « Barrack Hill » than the Napean stone; the distance that the stone would have to be drawn is about 7 miles, but it would have to be transhipped twice on the road, which would make the cost about equal to that of Napean.

Notwithstanding the great increase of cost, I am of opinion that the adoption of the sandstone would be judicious, and the expense may perhaps be properly charged to the general item of precaution against the effects of fire.

I have the honor to remain,

Sir,

Your obedient Servant,

(Signed) JOHN MORRIS,  
Clerk of Works.

The Honorable  
The Commissioner of Public Works.

**No. 67.**

## APPENDIX C. 5.

45007.  
Stent & Laver to  
Comr. of Pub. Works.

OTTAWA, January 25, 1860.

The Honorable,  
The Commissioner of Public Works.

SIR,

In obedience to the instructions received from the Deputy Commissioner, in regard to the native sandstone being made use of in facing the Departmental buildings at Ottawa, in lieu of limestone : We beg to submit to you the results of our researches thereon, and to report on two quarries that appear to us eligible for the purposes in view, which may be employed with considerable advantage for those portions of the buildings which will require only hammer dressing, the nature of the stone being such as to prevent its successful use for moldings, or otherwise requiring much labor in preparation.

We would, however, beg to draw your attention specially to a quarry in the township of Nepean, about 10 miles from this City, the stone of which we find on close examination to be of superior quality, (a specimen has been forwarded to the Department for inspection), and to be obtained in large quantities, in courses varying from three to eighteen inches in thickness, of any dimensions, and of a uniform color and texture, the tint being of a yellowish grey.

We have thoroughly investigated the facilities for transporting this stone, and applying it to the external face of the Departmental buildings, and beg to submit our estimate of the cost, should it be deemed desirable to apply it for that purpose.

We would recommend its adoption for the following reasons : 1st, its value as compared with the limestone in the event of fire occurring ; and 2nd, its very superior appearance and general effect in contrast with the limestone, together with the more durable properties it possesses for external work.

The difference of cost will be principally on the carriage, and we would beg further to submit, that if our suggestions be entertained and the stone be adopted, no time should be lost in instructing us to that effect, owing to advantages of getting the stone into the city during the continuance of sleighing, and the increased difficulties of obtaining it as the spring advances.

The external surface of the two Departmental buildings amounts to

one hundred and twenty-eight thousand five hundred feet ; and the difference of cost between the limestone as specified for this work, and the sandstone referred to above, would be as 10 cents to 30 cents per foot, or the additional cost for the latter of twenty five thousand seven hundred dollars (\$25,700).

We beg to add that this stone will be employed extensively in the buildings under the present contract, for quoins, plinths, &c. requiring only hammer dressing, the molded portions being of Ohio sandstone.

We have the honor to be,

Sir,

Your obedient servants,

(Signed) STENT & LAVER,  
Architects.

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**No. 68.**

**APPENDIX C. 6.**

**47335.**

Copy of a report of the committee of the Hon. the Executive Council, approved by His Excellency the Governor General in Council on 2d. June, 1860.

On a report, dated 10th March 1860, from the Hon. the Comissioner of Public Works, stating that a proposal has been made to substitute sandstone for limestone throughout in the Public buildings at Ottawa, instead of using it only for the dressed work on the buildings.

That he has obtained the opinion of the Architects and Deputy Commissioner on the proposal, and also on the quality of the stone, a specimen of which has been submitted to Your Excellency.

That the original contracts and specifications provide for the use of limestone ; and the extra cost which the change would involve is reported by the Clerk of works to be \$36,330, and by the Architects \$41,000.

That the existing contracts already involve an expenditure, without making any allowance for certain quantities of extra work necessary and already ordered, of \$730,000 ; and allowing \$140,000 for the residence of the Governor General, would make the entire charge on the appropriation \$870,000.

That the balance of the appropriation is insufficient to meet the extra expenditure.

That he sees no reason for changing the materials determined upon and specified in the contract. That the substitution of sandstone is merely a matter of taste, so as to give a lighter appearance to the building, while the contrast between the limestone and the lighter colored stone of which the dressed parts are to be composed, has in other buildings been adopted from choice.

The committee are of opinion that the substitution of the sandstone for the limestone will make a decided improvement in the appearance of the buildings, and they therefore recommend the change; and that the contractors be called on to assent to the change, and to agree to the difference of estimate in the expense above mentioned, and also to agree that the present contracts shall remain in every way intact.

Certified,

(Signed) WM. H. LEE,  
C. E. C.

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No. 69.

APPENDIX D.

50495.  
Fuller & Jones  
to Commissioner.

OTTAWA, November 30, 1860.

SIR,

We have the honor to inform you, that we are requested by the Deputy Commissioner to submit to your consideration and approval some suggestions for alterations in the construction of these buildings, which we made known to him during his late visit of inspection here.

1st. The use of iron in the construction of the roofs, in place of timber as specified and contracted for; this substitution would necessarily entail some additional expense, but we consider it would be amply compensated for by the additional durability and greater protection from fire. We more particularly desire it in the roofs over the Legislative halls.

As the Contractor is now about to provide the requisite materials for these roofs, we consider it our duty to bring the subject to your notice before giving him the necessary instructions.

2nd. To substitute cement floors in place of wood in all rooms which by the contract are to be laid with the latter material.

At the time the specifications for fire-proofing were prepared, we recommended that cement should be used ; but it was not then thought desirable, on account of the prejudice which generally exists in this country against having floors laid with material as hard and impervious as marble ; and in our recent interview with the Deputy Commissioner it was considered that by the use of the Patent Kamptulicon floor-cloth, this objection would be quite overcome.

Floors laid with cement are much more durable, more cleanly, and, of course, render damage from fire almost impossible.

Awaiting your instructions,

We remain,

Sir,

Your obedient servants,

(Signed) FULLER & JONES.

To the Honorable

The Commissioner of Public Works.

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No. 70.

Back 50495.  
Deputy to  
Commissioner.

*(Memorandum on the back of the foregoing letter),*

November 23rd., 1860.

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To the Commissioner,

The first suggestion,—(iron roofs). I agree with the Architects that the substituting of iron for wood in the construction of the roofs, though attended with additional expense, would be amply compensated for by the additional protection thereby afforded against accidents by fire ; but, knowing it to be the desire of the Government to keep down expenditure on these buildings as much as possible, I do not feel encouraged to second their recommendation, further than as regards the roofs of the two Houses, which certainly require that protection. These having to be lighted by gas from the ceiling, as in the House of Commons in London, and the two Houses in Washington, the heat generated by the gas will be so great as to render it almost impossible effectually to protect the wooden roof from ignition.

With the view, therefore, of meeting the whole question, I recommend that the Architects be called upon for an estimate of the difference of

cost between iron and wood for the roofs; 1st of the two houses, and 2ndly for the remainder of the buildings.

2nd. Query, « Whether the floors shall be finished in cement, or covered with wood ».—The contract provides for the latter, but the change does not involve additional expenditure, and is actually a matter of taste; whether wood is used or not, the concrete floor must be covered with cement, and the question is whether it shall receive a hard finish at the surface, or be covered over with boards. It is my belief that a finely finished cement floor, covered either with coarse matting or with Kamptulicon in the passage and all the new Public offices, and with good thick carpeting in the more private ones, would meet with general approval. Such floors would be more durable and cleanly than wood, and would possess the additional charm of being noiseless. The new material, Kamptulicon, has been some months in use in the new Custom-House, Quebec, and gives great satisfaction.

(Signed) SAMUEL KEEFER.

29th November, 1860.

## No. 71.

## APPENDIX E.

52390.

Fuller & Jones to  
Secretary Pub. Works.

PARLIAMENT BUILDINGS,  
Ottawa, April 5th. 1861.

SIR,

We have the honor to submit for the approval of the Hon. the Commissioner a design for an approved mode of lighting the north and east corridors of the Legislative Council, and the north and west corridors of the Legislative Assembly; also the corridors leading from the picture gallery to the library.

By referring to the contract plans, it will be seen that this is to be effected by means of skylights, and to which there is objection on account of damage or breakage by falling of snow and ice from upper roofs.

We were directed by the Deputy Commissioner some months since to fully consider the matter, and to suggest if possible some means of obviating the difficulty, and should have prepared this drawing earlier had we not been so fully occupied in making reports &c., for the Chief Engineer.

By referring to the enclosed drawing, it will be seen that the skylights

are proposed to be fixed on the steep part of the roofs, and protected by a projecting arcade. We consider by this all danger of breakage or blocking up of snow will be avoided, and the external appearance very much improved.

In order to give height to this portion of the building in appearance, we propose to omit the carved string at the springing of the windows, and to introduce buttresses (the latter will be useful), affording additional means of counteracting the thrust of the principals of the roofs. The staircase and water-closet windows are also altered in character, and at the same time are more appropriate and will afford more direct light to the members' staircase.

The cost of those alterations will depend on the material used in the construction of the roofs ; if no change is made and wood be used for the framing of the roofs, we estimate the cost of these alterations not to exceed eight thousand dollars (\$8,000) ; if iron, the increase would be about ten (10) per cent.

We would remark that in making any alterations of this kind we labor under the disadvantage of having to deduct at the low rate of prices in the contract schedule, while all additions have to be allowed at a fair rate.

We are anxious that this change should be made, not only because of the improved external appearance, but also on account of the benefit to the buildings.

We have the honor to be,

Sir, ,

Your obedient servants,

FULLER & JONES,

Architects.

To the Secretary of  
The Department of Public Works.

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**No 72.**

## APPENDIX F.

**50605.**  
**Deputy to Comr.**

QUEBEC, 30th November, 1860.

SIR,

I beg to call your attention to the letter of the Architects of the Departmental buildings at Ottawa, N°. 45,595, and to those of the Architects of this Department N°. 45,654 and N°. 45,863, on the subject of the accommodation provided by the present contract plans for the several Departments of the Government.

On comparing the contract plans with the original printed statement of the accommodation required for the Government Departments (with N°. 45,863), there is found to be a deficiency of *seven rooms*; and comparing the latter with the accommodation now actually required, there is a further deficiency of *nine rooms*: making in all *sixteen rooms* which ought to be provided in addition to the present plans, for the proper accommodation of the Government service.

The accompanying statement will show better than any written explanation precisely what extent of accommodation was proposed to be provided for each Department by the original printed statement before referred to; also the amount provided by the present contract plans; and lastly the amount now actually required, without making any allowance for the future increase of the several Departments. It shews that with regard to the right-hand block, ample provision has been made for the particular Department assigned to it, but that in the left-hand block, there will be a deficiency of *fourteen rooms* for the Finance Department (the Customs and Audit branches not being provided for), one room for the Crown Land's, and one for the Post Master General's.

To meet these requirements, the Architects have sent in plans proposing an extension of the N. E. wing, giving sixteen additional rooms; but not being covered by the contract, no order has been given for the extension, and it now rests with this Department to take such action in the matter as the case may demand. The position of the work on this wing is such as to admit of the extension being carried out in harmony with the rest of the design, and this addition to it will make the left-hand block correspond better with the right-hand block, and materially improve the general effect.

I should have brought this matter under your notice at an earlier



date, if a decision upon it had sooner been necessary ; but the buildings are now advanced to that stage when it is desirable that the extension, if to be made by the present contractors, should be authorized, in order that the materials for it may be got out during this winter, ready for the early prosecution of the work next spring. The whole of these Departmental buildings must be roofed in and inclosed by the end of the next building season, and the heating apparatus put in operation for the interior finishing, in order to their completion by the time specified, February, 1862.

I beg therefore to submit whether this extension is not unavoidable, and whether, in that case, it is not expedient to call upon the Architects for an estimate of its cost, with the view of entering into an arrangement with the present Contractors for its construction.

I have the honor to be,

Sir,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Commissioner.

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## DEPARTMENTAL BUILDINGS, OTTAWA.

Statement shewing the extent of accommodation provided by the present contract plans, that proposed by the original printed statement, and that now actually required.

| IN RIGHT-HAND BLOCK.                   | According to<br>printed<br>statement. | According<br>to contract<br>plans. | Now requi-<br>red. |
|----------------------------------------|---------------------------------------|------------------------------------|--------------------|
| Provincial Registrar . . . . . rooms.  | 4                                     | 6                                  | 6                  |
| Adjutant General . . . . . do          | 12                                    | 11                                 | 11                 |
| Indian Department. . . . . do          | 4                                     | 4                                  | 4                  |
| Receiver General . . . . . do          | 11                                    | 12                                 | 12                 |
| Crown Law Department . . . . . do      | 9                                     | 10                                 | 10                 |
| Agriculture . . . . . do               | 8                                     | 8                                  | 8                  |
| Governor General's Staff . . . . . do  | 6                                     | 6                                  | 6                  |
| Executive Council . . . . . do         | 15                                    | 16                                 | 16                 |
| Provincial Secretary . . . . . do      | 12                                    | 12                                 | 12                 |
| Board of Railway Commissioners do      | 0                                     | 2                                  | 2                  |
| Civil Service Board . . . . . do       | 0                                     | 2                                  | 2                  |
| Total. . . . .                         | 81                                    | 89                                 | 89                 |
| IN LEFT-HAND BLOCK.                    |                                       |                                    |                    |
| Crown Land, Woods and Forests, rooms.  | 30                                    | 29                                 | 30                 |
| Public Works . . . . . do              | 15                                    | 16                                 | 15                 |
| Finance, Customs and Audit. . . . . do | 24                                    | 10                                 | 24                 |
| Post-Master General . . . . . do       | 20                                    | 19                                 | 21                 |
| Total. . . . .                         | 89                                    | 74                                 | 90                 |

## ABSTRACT.

The printed statement called for. . . . . 170 rooms,  
 The contract plans provide for . . . . . 163 "  
 There are now required . . . . . 179 "

Making a difference of. . . . . 16 rooms required  
 to be added to the left-hand block.

(Signed) S. KEEFER.

30th November, 1860.

## No. 73.

## APPENDIX G.

Fuller & Jones to  
J. Page.

—  
PARLIAMENT BUILDINGS,

Ottawa, 8th March, 1861.

SIR,

In compliance with your instructions, we beg to submit a detailed report upon the mode of supplying these buildings with water, to which we briefly referred in our report to you, bearing date 10th January, 1861.

There are two positions in which the necessary works could be located to obtain a supply of pure water, viz, at the foot of the ravine on the west side of the hill alluded to in our former reports, and immediately to the north of the library, at a point where the bank reaches out into the stream. The latter position would be the most naturally favorable for drawing the supply, the stream being so rapid at this point that there would be no possibility of sawdust or other impurity being drawn into the suction-pipe ; but owing to the steepness of the bank and its jutting out into deep water, no buildings could be erected at its base without very considerable outlay and a great disfigurement of the bank itself. The erection of a chimney-shaft on the brow would also greatly mar the effect of the buildings, and though the shaft might possibly be dispensed with by excavating for and carrying the smoke-flue up under the surface to the cold-air duct under the library, and along it to the chimney shaft in the boiler-house; this is an alternative that we cannot recommend ; since we consider there would be considerable difficulty in obtaining an efficient draught, and think it most undesirable to carry a smoke-flue through the cold or fresh air inlet, because, even with the greatest care, some faults might occur in the pipes, permitting smoke and noxious gases to be drawn into the library and other principal rooms.

Taking these objections into consideration, we recommend as preferable the site first alluded to, as affording every facility for locating the requisite buildings and for obtaining with certain inexpensive precautions, perfectly pure water. We advise that at the time of the lowest water (generally at the end of June), a cistern or well should be excavated in the rock, about 60 feet from the base of the bank, the bottom of which should be about four feet below the level of low water ; channels in the rock should be cut on the down stream side of the well for its supply-pipes, so that water might be drawn in from a level sufficiently low to

prevent floating impurities being drawn in, whilst more solid organic matter would be excluded by the position of the pipes. The well should be built round with water-tight masonry carried up above the level of highest water, by which the floating of any substance into it would be prevented. A portion of the foreshore should be filled up to the level of the top of the well and be surrounded by a wall, and on this made ground or quay should be erected the engine-house and dwelling for the engineer. We propose to carry the smoke from the engine-house, up the river bank in a cast-iron flue pipe, which might be laid in the trench to be formed for the main drain-pipe, (this trench being excavated of sufficient width to receive both pipes and the rising main,) and carried to an ornamental chimney-shaft to be erected on or about the site of the present flag-staff. The shaft in this position would not, if suitably designed, detract from the general appearance of the buildings, but would rather add to them; and round it an open tank, protected by an ornamental balustrade might be formed, from which, by means of pipes, hydrants, and a few lengths of hose, the whole of the site might be watered during the summer months. The daily supply required for the whole building, Parliamentary and Departmental, we estimate to be :

|                            |   |                                           |   |               |
|----------------------------|---|-------------------------------------------|---|---------------|
| Parliament<br>buildings.   | { | Boilers for heating and ventilating, 3000 | } | 7000 gallons. |
|                            |   | gallons . . . . .                         |   |               |
| Departmental<br>buildings. | { | Domestic and general purposes, 4000       | } | 8000 gallons. |
|                            |   | gallons . . . . .                         |   |               |
|                            | { | Boilers for heating and ventilating, 2000 | } |               |
|                            |   | gallons . . . . .                         |   |               |
|                            | { | Domestic and general purposes, 6000       | } |               |
|                            |   | gallons . . . . .                         |   |               |

Making the total of 15,000 gallons.

The power of the engine by the river should be sufficient to pump this quantity in about 6 hours, and we therefore recommend that a high-pressure engine of 6 horse power, working expansively, should be employed. The rising main should be 6 inches clear diameter, and have upon it systems of stop-cocks to diverge the water if required, to either of the blocks, or to the tanks round the proposed chimney-shaft, or tanks under Public hall. As possibly the engine might occasionally require repairs, it is desirable that a storage power of some days' supply should be provided. For the general purposes of the Parliament buildings, the contractor has to provide and fix, under his contract, cisterns in various roofs, containing in aggregate 21,000 gallons (as stated in our report of the 10th

January last); this provision would afford storage, for the especial purpose, of 5 days. We presume similar provisions have been made in the Departmental buildings, but it is necessary that storage for supply of the boilers should also be provided under the Public hall of these buildings : owing to the natural undulation of the surface of the ground, there is a depth of above 6 feet not appropriated to any purpose, which would be admirably suited for reservoirs. We propose to use this space for the purpose, and could obtain in it storage for 65,000 gallons, equal to 13 days' supply for the boilers alone, or more than 4 days' supply for the whole requirements of the buildings.

As the floor of these reservoirs would be at least 16 feet above the level of the floors of the boiler-houses in the Departmental buildings, these latter might be supplied by gravity alone.

The contractor for « heating and ventilating » has to supply and fix in « engine room » (which adjoins the Public hall) a steam engine of 4 horse power, for pumping up water to the roof cisterns. Our proposed position for the reservoirs would be especially convenient on this account.

Without going very minutely into the subject and preparing detailed plans, it is impossible to furnish a perfectly accurate statement of the cost of the work, but we consider that the following estimate would not be exceeded.

Estimated cost of catch-well, engine and engineer's house,

|                                              |    |                                           |          |
|----------------------------------------------|----|-------------------------------------------|----------|
| quay, &c. . . . .                            |    |                                           | \$16,865 |
| Do                                           | do | engine, boilers, feed main pipes, &c . .  | 5,200    |
| Do                                           | do | chimney-shaft and iron flue-pipe . . .    | 8,500    |
| Do                                           | do | tank by shaft, pipes, hydrants, and hose. | 3,701    |
| Do                                           | do | reservoirs under hall and stop-cocks . .  | 4,000    |
| Do                                           | do | planting river bank, steps down do do     | 2,000    |
| Contingencies, &c., and 10 per cent. . . . . |    |                                           | 4,026    |

---

Total estimate cost being. . . . . \$44,292

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In January, 1860, we received a communication from the Honorable the Commissioner enclosing a proposition from the Town Council here, respecting a proposed reservoir and water-tower on the site which we now recommend for the chimney-shaft, and requesting us to inform him if, in our opinion, such an erection would interfere with the buildings under our charge. We then reported that it would not, and, if designed in accordance with the buildings, would rather add to than detract from

their appearance ; we are still of the same opinion, but think the large size of the proposed reservoir objectionable.

Of the advisability of allowing the City Council to erect and have control of water-works on the site of these buildings, we do not presume to offer an opinion. In the foregoing report we have only had in view the supply of the Government buildings, without reference to the City water-works.

Trusting that this report is sufficiently explanatory,

We have the honor to be,

Sir,

Your most obedient servants,

(Signed) FULLER & JONES,  
Architects.

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No. 74.

APPENDIX II.

51830.

J. Page to Secy. P. W.

OTTAWA, 26th. February, 1861.

The Secretary of Public Works.

SIR,

By this day's mail will be forwarded by Messrs. Stent & Laver, Architects, the estimates of work done in connection with the two blocks of Departmental buildings.

These estimates have been put in their present shape, under my direction, and in doing so the following objects have been kept in view, viz :

1st. To keep contract work, extra work, and works connected with heating and ventilation separate from each other, except for materials delivered, which are in all cases understood as contract work, until they are either prepared for, or placed in other work, or have been got out for a special purpose.

2nd. No attempt has been made on this occasion to diminish the length of the estimate, but, on the contrary, every item of work done has been introduced, and, under the head of *bills rendered* (the details

or vouchers for which accompany the estimate), are such accounts as have been hitherto paid, but do not strictly form an item of the contract.

3rd. In all cases when an advance has been made on materials delivered, such as stone, brick, sand, or timber, a corresponding reduction has been made from the full price intended to be allowed when they are in the work ; for instance, bricks when laid in the work are valued at a certain sum per 1,000, but as an advance has been made on the bricks when delivered and also on sand, and as both these items may be increased from time to time, they are allowed to remain in that shape, and so much less paid for the quantity actually built. This I consider to be a better arrangement for the estimates, and less likely to lead to errors in future.

4th. By keeping the estimates for the two blocks of buildings separate and under the *headings* above referred to, with each item numbered in the left hand column, it is believed that in future the monthly estimates may be diminished in length by simply transferring the totals under the different heads to the new sheet, as shewn in the accompanying form ; so that at the end of every three or six months, an abstract of all the previous estimates could be made by any one from the sheets themselves.

5th. I have felt called upon by the « *Order in Council* » and instructions based upon it, to direct the attention of the Architects to, such prices allowed for additional, or « extra » work as I considered, did not bear a fair proportion to its relative value, which has led to some of the prices having been diminished and others increased.

The reports addressed to me on these questions by the Architects, together with my letters to them, will be submitted on my arrival at Quebec, which will be in a few days.

Having made these remarks, I will only add that if the Department approve of the form of estimate, for future use (a blank form of which is enclosed), it might be well to have 500 or 600 copies printed at once, and also to get two books made of similar blank forms for each building, viz :

Two for the Eastern block of Departmental building.

Two do Western do do do

Two do Parliament buildings.

One copy of each of the books to be sent to the respective Architects, and the others to remain in the office of the Department, into which all future estimates of the works may be entered.

I may again say that my object has been to render the estimates less complicated ; but if I have been unsuccessful in doing so, they can now easily be put into any other shape, that the Commissioner may deem expedient.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) JOHN PAGE,  
Chief Engineer P. Works.

P. S.—The quantities I have checked, and fully examined the prices ; but the extending of amounts I leave to the book keeper.

(Signed) J. PAGE.

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## PARLIAMENT BUILDINGS.

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CORRESPONDENCE BETWEEN JOHN PAGE, THE ARCHITECTS, AND  
THE BUILDERS, IN REFERENCE TO PRICES.

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**No. 75.**

*John Page to Secretary  
of Public Works.*

QUEBEC, 13th March, 1861.

The Secretary of  
Public Works.

SIR,

I beg to submit herewith certain communications which passed between the Contractor and Architects of the Parliament buildings and myself, whilst at Ottawa, relative to prices for certain items of additional work connected with the buildings.

I may, however, state that previous to these statements and reports having been referred, the subject of prices had been freely discussed by myself and the Architects.

I have the honor to be;

Sir,

Your obedient servant,

JOHN PAGE,  
Chief Engineer Public Works.

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**No. 76.**

*John Page to  
Fuller & Jones.*

OTTAWA, 2nd February, 1861.

Messrs. Fuller & Jones,  
Architects Parliament buildings.

GENTLEMEN,

Enclosed herewith is a memorandum addressed to me by Thos. McGreevy, Contractor, relative to certain prices allowed him and others,

claimed for work done and to be done, in connection with the Parliament buildings in progress of construction under your charge.

As the various questions brought forward involve considerable expenditure, it is desirable that you should, at your earliest convenience, report fully, in your official capacity, on each item, so as to admit of a decision being arrived at.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed.) JOHN PAGE,  
Chief Engineer Public Works.

### No. 77.

Memorandum on prices  
submitted by Thomas  
McGreevy to J. Page.

#### RATES FOR EXTRA-WORK DONE ON PARLIAMENT BUILDINGS, OTTAWA.

Excavation in earth, 30 cents per yard. 75 should be allowed for this work, as in many cases the digging was in drains over 12 feet deep, and after being finished the sides fell in, causing additional labour; and as most of the work had to be done in winter, the earth was frozen so hard that rock could be excavated almost as easy, and then the stuff had to be carted and wheeled a distance over 150 yards in many instances; and again, great quantities of large bowlders were found amongst the earth, which caused much labor.

Excavation in rock, from \$1.25 to \$1.90 per yard. From \$1.75 to \$2.50 should be allowed for this work; all the stuff had to be dragged over 200 yards and then the trenches were so narrow that men could not get room to work to advantage.

Excavation in ducts and drains, from \$1.90 to \$3.50. The price allowed for this work is extremely low, as a great deal of machinery had to be used in consequence of the trenches being so deep; water accumulated largely, and then the difficulty of splitting bottom beds, so as not to go too deep.

Ohio stone, per foot, 27 cents. \$1.00 per foot should be allowed for this stone; lake freight and insurance cost so very high,—in fact freight could not be had at any price last fall.

Plain face on Ohio stone, 28 cents per foot. This work cost much

more than the price allowed, wages being so high ; and then the mode of measurement so unfavorable to the Contractor, and not that generally used.

Moulded work on Ohio stone, 40 cents per foot. The same objections will apply to this price as the last, with the addition that the mouldings are deep and hard to be got at, and that superficial, instead of lineal measure, is what is allowed.

Moulded circular work on Ohio stone, 62 cents per foot. This price does not half pay the men for working it, for the reasons above stated.

Sunk face on Ohio stone, 50 cents per foot ; same as last.

Chamfers on Ohio stone, 32 cents per foot ; same as last.

Chamfers on Brockville stone, 55 cents per foot. It is almost impossible to name a price sufficient to pay for this work, the stone is so awfully hard, and a great deal of waste.

Mitres on Brockville stone, 36 cents per foot ; should be \$3.00 to pay, for the above reason.

Mitres on Ohio stone, 25 cents per foot ; \$1 per foot should be allowed for this work, for reasons already stated.

Rubble masonry, \$8 per toise. The price allowed for this work is also much too low, as many of the walls are not more than 18 inches thick, and the footings had to be picked and levelled. The work had to be extremely well done; machinery had to be used in building; and then, again, the irregularities in the rock caused a great deal of labor. Masons had to be paid 50 per cent more wages than in Quebec or Montreal, and great difficulty to get them. Laborers the same.

Picked face to cold-air ducts and drains, 41 cents per foot. The same price, 90 cents per foot, should be allowed for this work as is allowed for boiler-house, as it is exactly the same, and in many cases better and more difficult to set ; great numbers of short turns and angles.

Nepean stone for facing, 21 cents per foot. This stone is so expensive to quarry, and at such a distance from the works, that it costs more when brought on the ground than the price allowed for it in the wall ; and then it is so very hard to work, that 50 cents per foot is as little as will pay the Contractor. There is a great deal of breakage and waste in working.

Relieving arches, Nepean stone, 30 cents per foot. 75 cents per foot should be allowed, for the reasons above stated. Nepean flagging 6 inches thick, 65 cents per foot. This price is much too low, for the reasons above stated ; and then the flags are very awkward and expensive to handle, and have to be jointed on four sides.



Filling to walls, 30 cents per yard. The price allowed for this work is absurd, as a great deal of the stuff had to be brought from the city, and actually cost over 45 cents for the cartage alone, and then had to be wheeled some distance. \$1 per yard should be allowed.

Arnprior marble in blocks, \$1.50 per foot. This marble cost more in the quarry.

Lathed centering, \$1.80 per yard; should be \$3.80 per yard.

Ribbed centering, 15 cents per foot; 65 cents per foot would be about the price.

Cement, per barrel, \$2.00 The cost of the cement at least should be allowed \$2.60 per bbl.

Laborers, \$1.00 per day. Something more than the price paid should be allowed.

Carpenters \$1.50 per day; same as above.

Bricks laid in walls, \$12 per 1000. \$16.00 per thousand should be allowed, as the cost of the bricks alone is \$8.00 per thousand, irrespective of labor; they have to be carried into the interior walls a great distance from outside of building.

THOS. MCGREEVY,  
ROBT. MCGREEVY.

Ottawa, 17th January, 1861.

## No. 78.

Report on prices  
Fuller & Jones to  
John Page.

PARLIAMENT BUILDINGS,

Ottawa, 8th February, 1861.

SIR,

We have to acknowledge the receipt of your favor of the 2nd instant, enclosing memoranda addressed to you by Mr. McGreevy, relative to certain prices allowed him for work done, and to be done in these buildings; and in compliance with your request, beg to submit the following report, referring separately to each item:

N<sup>o</sup>. 1.—«Earth excavation», allowed in progress estimates at 30 cents per cubic yard. We were informed by the Clerk of works that this work was sublet at first for 12½ cents per cubic yard, and afterwards at 16 cents, at which rate a considerable portion was done. Although this excavation was chiefly in trenches, many of them were as much as 8 feet in width; and if any slips took place, they were measured. All

clay and earth excavations done during severe frost, were returned in the estimate at the same rate as that allowed for rock. We consider 30 cents per cubic yard a fair price for this work.

N°. 2.—« Excavations in rock, » allowed in progress estimates at from \$1.25 to \$1.90 per cubic yard. The greater portion of this work was in the boiler-pit, and very little in trenches. We were informed that the first portion done was sublet at 90 cents per cubic yard, but that the sub-contractor was unable to work at that price, owing to the faulty nature of the rock and the unevenness of the beds. The labor was greater than we had anticipated ; but we consider that \$1.25 for the first five feet in depth, \$1.90 for the second, and \$2.50 for third five feet in depth, would be fair prices to allow for this work.

N°. 3.—« Excavations in ducts and drains », allowed in progress estimates at from \$1.90 to \$3.50 per cubic yard.

The remarks previously made as to the nature of the rock apply in this instance ; in many cases the bottom bed was so thick that it had to be split a very tedious operation. Considerable expense was also incurred in pumping out the water. We consider that \$1.90 for the first five feet in depth, \$2.25 for the second, \$3.50 for the third, and \$5.00 for the fourth five feet in depth, would be fair prices to allow for this work.

N°. 4.—« Ohio stone », allowed in progress estimates at 72 cents per foot cube.

This price is hardly sufficient to cover insurance, waste, and profit. We consider that 75 cents per cubic foot would be a fair price.

N°. 5.—« Labor plain-face work on Ohio stone », allowed in progress estimates at 28 cents per foot super.

We consider this price sufficient at present.

N°. 6.—« Labor-moulded work on Ohio stone », allowed in progress estimates at 40 cents per foot super.

We consider this price sufficient at present.

N°. 7.—« Labor-moulded circular work on Ohio stone », allowed in progress estimates at 62 cents per foot, super.

We consider this price sufficient at present for the generality of this work ; in some few cases, such as small caps and bases of columns, a slight addition may be fairly made.

N°. 8.—« Labor-sunk face on Ohio stone », allowed in progress estimates at 50 cents per foot super.

We consider that 42 cents per foot super would be sufficient at present.

Nº. 9.—« Labor-chamfered work on Ohio stone », allowed in progress estimates at 32 cents per foot super.

We consider this price sufficient at present.

Nº. 10.—« Labor-chamfers in Brockville stone », allowed in progress estimates at 55 cents per foot super.

This stone was introduced by the Contractor for his especial benefit, but was afterwards found to be too hard to work, nor could it be obtained in any suitable sizes without very considerable delay ; we therefore ordered (at the request of the Contractor) that Ohio stone should be used instead.

We consider this price sufficient.

Nº. 11.—« Labor-mitres on Brockville stone », allowed in progress estimates at 36 cents per foot.

We consider this price sufficient.

Nº. 12.—« Labor-mitres on Ohio stone », allowed in progress estimates at 25 cents per foot.

We consider that 35 cents would be a fair price to allow for this work.

Nº. 13.—« Rubble masonry », allowed in progress estimates at \$8 per toise of 54 cubic feet.

We consider this price sufficient for all work up to the level of the top of the plinth ; above that level the walls will be thinner, scaffolding, &c., will be required, and there will be considerable labor in bonding to the brickwork, and in providing and laying the flat bedded stones for bands, as the stone-work will have to be levelled so as to range with the courses of brick. We consider that for all walls above the level of plinth, \$10.00 per toise would be a fair price for rubble masonry.

Nº. 14.—« Picked-face for cold-air ducts », allowed in progress estimates at 41 cents per foot super.

This work is not, as Mr. McGreevy states, exactly the same, and in many cases better than that for the boiler-house. The stones do not bed near as much.

When this work was commenced, and during the progress, the Contractor had difficulty in procuring men, and consequently could not control the work ; but as the season advanced men were more readily obtained, and he was able to make more advantageous terms, particularly so when building operations were stopped in November, as the men were anxious to obtain employment for the winter. It was quite impossible, until within a recent period, that we could determine what would be the proper rate to allow ; after maturely considering the information we

have been able from time to time to procure, we are now of opinion that the rate allowed, 41 cents, is not too high for that done in the early stages of the work, but it is a matter of considerable difficulty to determine at what period this rate should be altered. We would recommend that of the number of feet returned, say 21,976 super., two-thirds should be allowed at the rate of 41 cents per foot, and the remaining third at 35 cents; and that all work prepared since the time at which building operations were suspended, say after the 30th November, should be allowed at the rate of 30 cents per foot. The stones for picked-face for main sewer were required deeper in the bed. We consider the rate allowed, 41 cents, ample, but do not feel justified in advising any reduction upon the work done for stones prepared since the building was stopped, say 30th November; we think 36 cents would be sufficient.

« The picked-face for boiler-house ». The stones for this work were much wider on the beds than those of either the main sewer or cold-air ducts; we consider that of the number of feet, viz 5000, allowed in progress estimates at 90 cents, two thirds should be allowed to remain at 90 cents, and the remaining third at 80 cents, and work prepared since the 30th November, at 75 cents.

N°. 15.—« Nepean stone-facing », allowed in progress estimates at 21 cents per foot super., in addition to the contract price for facing in limestone.

This price has been determined by order in Council, and accepted by the Contractor. We do not consider, therefore, that it can be altered, but would remark that we consider the price ample.

N°. 16.—« Relieving arches in Nepean stone », allowed in progress estimates at 30 cents per foot super. The remarks on N°. 15 apply also to this item.

N°. 17.—« Nepean stone flagging 6 inches thick », allowed in progress estimates at 65 cents per foot super.

We consider this price high, and are endeavoring to find out the actual cost; as far as we can judge at present, 60 cents would be sufficient.

N°. 18.—« Filling to walls », allowed in progress estimates at 30 cents per cubic yard.

We consider that 35 cents. would be a fair price to allow for this work, so far as it has been done; in future cases it must of course be regulated by the distance from which the filling has to be carted.

N°. 19.—« Arnprior marble in block », allowed in progress estimates at \$1.50 per cubic foot.

There is difficulty in determining the price which should be allowed for this work, as the Contractor is not yet able to order any large quantity, the extent to which it is to be used not yet being determined. As it has only been brought forward in small quantities, and at a season of the year in which carriage was most costly, we consider that \$1.75 per cubic foot might be allowed fairly for this marble.

N°. 20.—« Ribbed centering », allowed in progress estimates at 15 cents per foot lineal.

We consider this price sufficient for such of this work as has been executed : in certain cases it may be fair to increase it.

N°. 21.—« Lathed centering », allowed in progress estimates at \$1.80 per yard super.

We consider that \$2.00 per yard super., would be a fair price to allow for this work.

N°. 22.—« Cement per barrel », allowed in progress estimates at \$2.00 per barrel.

We consider that \$2.25 per barrel would be a fair price to allow.

N°. 23.—« Laborers », allowed in progress estimates at \$1.00 per day.

We believe the average rate of wages for laborers has been 90 cents per day in summer, 55 cents per day in winter.

We consider that \$1.08 per day in summer, and 66 cents per day in winter, would be fair rates to allow.

N°. 24.—« Carpenters », allowed in progress estimates at \$1.50 per day.

We believe the average rate of carpenters has been \$1.50 per day in summer, and 80 cents in winter.

We consider that \$1.80 per day in summer, and 96 cents per day in winter, would be fair rates to allow.

N°. 25.—« Bricks laid in walls », allowed in progress estimates at \$12.00 per thousand.

We find that the average price of bricks has been \$7.50 per thousand ; at that rate we consider \$13.50 would be a fair price to allow for bricks laid.

N°. 26.—« Picked arches to drains », allowed in progress estimates at \$1.75 per foot super.

We consider this price high for the work, when executed in summer when wages are highest ; and think that \$1.50 for drains, and \$1.25 for ducts, per foot super., would be ample to allow for work executed. This last item was not mentioned by Mr. McGreevy, but we consider it our duty to bring it before you for consideration.

In conclusion we cannot but express our surprise that Mr. McGreevy should have sent in such a long list of objections to the various prices allowed for additional work, because at the interview with which you favored him on the 29th January last, he only complained of 13 items, and stated that with the rest he was satisfied, though he did not consider them more than merely remunerative; and referring more particularly to the Napean stone-facing, he stated that he considered the question settled, and that he was content.

We trust that the foregoing remarks are sufficiently explanatory, but should you require any further details, we shall have pleasure in furnishing them.

We have the honor to be,

Sir,

Your obedient servants,

FULLER & JONES,  
Architects.

We beg to return herewith Mr. McGreevy's memorandum.

To John Page, Esq.

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No. 79.

PARLIAMENT BUILDINGS.

Fuller & Jones to  
John Page.

Ottawa, 20th February, 1861.

SIR,

Since we submitted our report upon the prices &c. allowed to the Contractor, we beg to state that from information we have obtained we find that our opinion as to the rate allowed for item N°. 14 « picked-face to ducts » being ample, is more than confirmed.

We are justified in stating that 30 cents per foot super., is sufficient for the work; and a reduction in similar proportion should be made for « picked-face work » in boiler-pit.

We have the honor to be,

Sir,

Your obedient servants,

FULLER & JONES,  
Architects.

To J. Page Esq.,

Chief Engineer Public Works.

**No. 80.**

OTTAWA, 28th February, 1861.

John Page  
to Fuller & Jones.

Messrs. Fuller & Jones,  
Architects.

GENTLEMEN,

Having carefully examined your report of the 8th instont (received yesterday) in reference to prices for certain items of additional work connected with the Parliament buildings in progress of construction under your charge,—

I agree generally with the suggestions therein contained, and consider they should, so far as applicable, be embodied in the estimate now being made.

I have the honor to be,  
Gentlemen,  
Your obedient servant,

(Signed) JOHN PAGE,  
Chief Engineer Public Works.

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## DEPARTMENTAL BUILDINGS.

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CORRESPONDENCE BETWEEN JOHN PAGE, THE ARCHITECTS, AND  
THE BUILDERS, IN REFERENCE TO PRICES.

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**No. 81.**

QUEBEC, 13th March, 1861.

John Page to Secretary  
of Public Works.

The Secretary of  
Public Works.

SIR,

I beg to submit herewith certain communications which passed between the Contractors and Architects of the Departmental buildings, and myself, whilst at Ottawa, relative to prices for certain items of additional work connected with the respective buildings.

I may, however, state, that previous to these statements and reports having been referred to me, the subject of prices had been freely discussed by myself and the Architects.

I have the honor to be,

Sir,

Your obedient servant,

JOHN PAGÉ,

Chief Engineer Public Works.

**No. 82.**

OTTAWA, 31st January, 1861.

Jones, Haycock & Co.,  
to John Page.

John Page Esqr.,  
Chief Engineer,  
Department of Public Works.

SIR,

In accordance with your request, we herewith transmit notes in regard to extra-work on Departmental buildings, Ottawa, which we have had the honor of submitting to Messrs. Stent & Laver, the Architects, and yourself, at an interview held in accordance with the request preferred in our letter of January 24th, 1861, addressed to Messrs. Stent & Laver; and we are prepared to furnish any further information if required.

We are, with much respect,

Your obedient servants,

JONES, HAYCOCK & Co.,  
Contractors, Departmental buildings.

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**No. 83.**

Memorandum on prices  
submitted by Jones,  
Haycock & Co., to  
John Page.

NOTES IN REGARD TO EXTRA-WORK, DEPARTMENTAL BUILDINGS, OTTAWA.

1. EXCAVATION.—Much of this has been either frozen ground, or hard-pan filled with large bowlders requiring blasting, or cemented gravel; all as difficult to excavate as rock. It has been done chiefly in narrow and intricate places, where men and carts worked to a disadvantage both to themselves and others, and has often been handled two or three times over. The hauls have generally been long, owing to the necessity of dodging about among the piles of stone, sand &c.

The whole average (including all classes of rock) is but 82 cents per yard, which is too low when you consider that  $\frac{1}{2}$  of it was either rock,

or equal to rock in cost of excavation. There are two items to which we would call your attention as insufficient: « Earth excavation extra », priced at 30 cents, and « earth from spoil-banks », on which 25 cents has been allowed. In regard to the *first*, we would say that the price is too low for the character of material, and the narrow and intricate places from which it had to be taken. In regard to the *second*, we would point out that this clay, mixed with limestone gravel, cements itself together if left alone for a little while, and has to be picked. That in this item is included the cost of levelling and filling where rooms were not required by original plan, and where walls were taken down to rocks, viz, filling and ramming around them.

In many cases, the earth was carted from the spoil-bank to outside of building, and then re-hauled, wheeled in, and rammed. This filling has never been estimated to us. The three prices allowed for « extra-rock are \$1.25, 1.90 and 2.25, » averaging 1.87. Much of it has cost us as much as the excavation in drains, owing to the narrowness of the trenches and difficulty of getting it away, and the price should be increased in some ratio to that.

2. EXCAVATION IN DRAINS.—Nearly all below ten feet has been under water excavation. Owing to the inclination of the strata, the cut would not drain itself. The bottom being thus :



so that we had to keep pumping and bailing all the time. The rock was very seamy, so that the powder would often blow out without lifting it, and the holes had to be refilled. In the left drain particularly, this was the case, and the strata were contorted so that the stones seemed to be actually dove-tailed into each other, requiring great labor to get them out. Expensive machinery had to be made, and, owing to the narrowness of the drains, were worked to a great disadvantage.

Much inconvenience and expense was felt in the delay to the works caused by blasting so near them, often causing the stoppage of 3 or 400 men, and disarrangement of their works. We have no other means of being paid for this, except in the price paid for drains, and it is a very serious item to us. Damages were caused both to our own works and the property of others, for which we have had to pay, although we took great care and went to considerable expense to prevent it, by covering

the blasts. The available service ground is but small. These drains and the machinery connected interfered with this, and put us to expense which we cannot claim, except in the price of the drains. The prices allowed up to this time have been ;

|                              |                 |
|------------------------------|-----------------|
| Left drain average . . . . . | 4. 25 per yard. |
| Right drain do . . . . .     | 2. 85 “         |
| <hr/>                        |                 |
| Both                         | \$3. 53 “       |

This work must not be compared to an open rock cutting, but rather to a tunnel.

The only advantage which these narrow deep drains have over tunneling is that they can be done in less time, as more men can be put on at once ; as far as the disadvantage of working in a crowded place is concerned, they are alike. In tunnels, the material is put upon cars, and drawn out at each end. This work is like the shafts of a tunnel, it has to be raised each block separately by derricks and horse-power. We think an increase might fairly be made in the price of the drains, particularly the right-hand one.

3. BRICK.—The market price of brick in Ottawa is from \$7.50 to \$8.00. The last lot we got cost \$7.62, but the rail-road has raised on us, so that the next lot will cost \$8.00. Owing to the treacherous nature of the Ottawa clay, brick never can be made here as cheap as at other places. Moreover their bricks contain a large proportion, at least  $\frac{1}{4}$  waste. The price allowed us for brick contract and extra is \$7 and \$12.50, averaging \$8.70. A careful inspection has shewn that our bricklayers cannot average more than 750 brick per day in plain work, owing to the amount of arch work. At this rate the cost of laying is :

|                                     |                     |
|-------------------------------------|---------------------|
| Bricklayer. . . . .                 | \$2. 00             |
| Laborer . . . . .                   | 1. 00               |
| Mortar, scaffold &c . . . . .       | 1. 13               |
| <hr/>                               |                     |
|                                     | \$4. 13             |
| add $\frac{1}{4}$                   | 1. 03               |
| <hr/>                               |                     |
|                                     | \$5. 16 per M.      |
| Add cost of brick at price. . . . . | 7. 50               |
| <hr/>                               |                     |
|                                     | \$12. 66 cost laid, |

There are 3000 M. in the contract and 1000 M. in extra-work, as near as we can ascertain.

|                                       |          |
|---------------------------------------|----------|
| 4000 M. brick at \$12.66 is . . . . . | \$50,640 |
| 4000 M. " " 8.78 is . . . . .         | 35,120   |

---

Loss on brick. . . . . \$15,520

Or if we are fortunate enough to burn our brick according to our estimate per. . . . . \$5.25 at kiln.

Deduct  $\frac{1}{4}$  of  $\frac{1}{4} = \frac{1}{8}$  . . . . . 0.68

Cartage. . . . . 0.50

---

\$6.43

Add merchant's profits 10 per cent . . . . . 0.64

---

\$12.23

The loss then would be \$48.920, less \$35.120, = \$13.800. Even on the last supposition, it would require to secure us from loss a price of \$27.92 per M. on our extra brick.

We think we are justified in saying that the price allowed for extra-brick, \$12.50 is not enough; and it must be remembered that the cost of all our brick-work has been increased by the addition of so many flues and arched work not in the original contract.

4. MASONRY.—Owing to the extremely low price of our contract masonry, the work, contract and extra, averages \$5.75 per toise, \$2.87 per yard, which it requires no argument to shew is much less than the bare cost, even in foundations; when we come to build next year, and raise the materials aloft and build in thin walls, mixed with brick and Ohio stone, we shall lose much more. Even supposing we were to be allowed \$10 $\frac{1}{4}$  for extra masonry, the average up to this time would be a little under \$7.00 for toise all round, which barely covers cost now, and certainly would not when we build thin and high walls.

5. OHIO STONE.—For our Ohio stone in contract, our loss will be very heavy; so much so, that no price that could be allowed for extra-stone would make it up. We do not expect this; what we do claim, is to be allowed for our extra-work « at fair current rates », and this we can shew has not been done.

|                                                    |        |
|----------------------------------------------------|--------|
| During the coming year we cannot get Lake freights |        |
| for less than . . . . .                            | \$3.75 |
| Kingston to Ottawa . . . . .                       | 2.00   |
| Cartage and expenses . . . . .                     | 0.50   |
|                                                    | <hr/>  |
|                                                    | 6.25   |
|                                                    | <hr/>  |
|                                                    | 14     |

44.

30. paid for stone,

1.5 insurance tolls  $1\frac{1}{2}$

3. handling, traveller, &c.

---

78.5 We find that in cutting stone there is a waste of 20 per cent.

$1\frac{1}{2}$  waste 15.7

---

94.2

$1\frac{1}{2}$  9.4 add merchants' profit.

---

103.6 cents per foot.

No stone is sold here for less than \$1.00 per foot. In reference to our prices for labor only on Ohio stone, we can say that they are entirely inadequate and are not "fair current rates" at all, as will be seen on referring to the prices paid on the Parliament building. They should be doubled in order to be correct.

6. COLD-AIR DUCTS.—The division walls, for which we are paid 37 cts. per superficial foot, have to be made chiefly of Gloucester stone, which, being dimension stone, costs us 25 cts. per cubic foot. Moreover, we shall be put to extra expense in cutting, on account of the numerous curves and junctions involving skew-work. The price for labor on side walls should be increased.

7. FLUES.

8. QUOINS.—Extra ; original specification calls for limestone.

9. NEPEAN STONE.—We do not intend to go very minutely into this at present, but will point out some of our extra expenses incurred by the use of this material.

1stly. We have had to haul stone from a quarry eleven miles off, instead of one mile.

2ndly. The cost of quarrying this stone, owing to its hardness, has been

not less than five times as much as that of quarrying limestone, such as our contract called for.

3rdly. All this stone has had to be cut, either at the quarry or on the ground. The style of work required by the original specimens erected on the grounds for Contractors' guidance, would have required nothing that could not have been done on the scaffold with an ordinary scaling hammer.—This we can prove by the testimony of some of the most respectable contractors in the Province, who made particular examination of these specimens at the time of the letting

4thly. It should be noticed, that after quarrying, cutting, and drawing the stone to the ground, there is a loss of ten per cent in quantities in building, owing to having to cut it up to fit the narrow spaces between quoins.

This loss, it is true, would have occurred on contract stone, but the value of the new stone being greater, the loss is so.

5thly. The actual cost of building this stone, even after being prepared as well as we can, is greater than that of limestone, owing to its hardness. This is very perceptible in the regular rubble work over the window-arches.

6thly. In making up a price, it should be noticed there are four different kinds of work.

1. In wall contract.
2. Rubble over window-arches contract.
3. Wall of extension, not in contract.
4. Rubble        do        do        do

JONES, HAYCOCK & Co.

Contractors Deprtl. Buildings.



J. PAGE, ARCHTS. AND BUILDERS ON PRICES.—*Departmental.* 301

Statement of actual cost of quarrying Nepean sand-stone, for December, 1860 and January, 1861 : taken from Jones, Haycock & Co's., Ledger.

Fortnight ending December 15th.

|                       |          |
|-----------------------|----------|
| Quarry pay-roll.....  | \$423.75 |
| Tools and powder..... | 116.91   |

Cubic feet quarried (6,480)—\$540.66—( $\$8.39 \text{ cents} \times 216 = \$18.12 \text{ per toise}$ .)

Fortnight ending December 29th.

|                       |          |
|-----------------------|----------|
| Quarry pay-roll.....  | \$343.94 |
| Tools and powder..... | 95.40    |

Cub. feet stone quar.(6,660)—\$439.34—( $\$6.6 \text{ cents} \times 216 = \$14.25 \text{ per toise}$ .)

Fortnight ending January 12th.

|                       |          |
|-----------------------|----------|
| Quarry pay-roll.....  | \$414.00 |
| Tools and powder..... | 80.17    |

Cub. feet stone quar. (7,308)—\$494.17—( $\$6.76 \text{ cents} \times 216 = \$14.60 \text{ per toise}$ .)

Fortnight ending January 29th.

|                         |          |
|-------------------------|----------|
| Quarry pay-roll.....    | \$485.67 |
| Tools and stores ... .. | \$112.22 |

Cb. ft. stone quar. (10,017)—\$597.89—( $\$5.97 \text{ cents} \times 216 = \$12.89 \text{ per toise}$ .)

Cost of quarrying, average of 2 months 6.92.....\$14.96 per toise.

We declare this statement to be correct.

JONES, HAYCOCK & Co.,  
Contractors,  
Departmental Buildings.

Ottawa, January 31st, 1861.

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No. 84.

OTTAWA, 2nd February, 1861.

John Page to  
Stent and Laver.

Messrs. Stent & Laver,

Architects, Departmental Buildings,

GENTLEMEN,

Enclosed herewith is a memorandum addressed to me by Messrs. Jones, Haycock & Co., contractors, relative to certain prices allowed



them, and others claimed for work done, and to be done, in connection with the Departmental buildings in progress of construction under your charge.

As the various questions brought forward involve considerable expenditure, it is desirable that you should at your earliest convenience report fully, in your official capacity, on each item, so as to admit of a decision being arrived at.

I have the honor to be,  
Gentlemen,  
Your obedient servant,

(Signed) JOHN PAGE,  
Chief Engineer of Public Works.

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**No. 85.**

*Stent & Laver  
to John Page.*

OTTAWA, 20 February, 1861.

SIR,

Herewith we have the honor to enclose our report and explanations on prices connected with Departmental buildings at Ottawa, as required by your letter of 2nd instant.

We at the same time beg to point out to you, that prices for certain works returned in the estimates for June last were objected to by the Department, and other prices substituted, as stated in a letter to us dated 11th July in last year.

These prices still remain subject to further consideration.

We have the honor to be,  
Sir,  
Your obedient servants,

(Signed) STENT & LAVER,  
Architects.

To John Page, Esqr.,  
Chief Engineer of Public Works.

We enclose also statement of contractors referred to.

S. & L.

No. 86.

OTTAWA, 20th February, 1861.

Presented & Laid on the  
Table of the House of Commons  
John Page.

John Page, Esqr.,  
Chief Engineer,  
Department Public Works.

SIR,

In reply to your letter of the 2nd instant, requiring us to report on certain memoranda of prices allowed and others claimed, for work done and to be done in connection with the Departmental buildings at Ottawa, submitted by Messrs. Jones, Haycock and Co., under date 31st. ultimo, we have the honor to offer the following remarks and explanations thereon.

1. EXCAVATION.—This work is alleged to be of a different class to ordinary earth excavation, « much of it being either frozen ground or hardpan filled with large bowlders, requiring blasting » &c., &c. ; and that there are two items for which the prices are deemed insufficient, viz, « earth excavation extra, priced at 30 cents per yard, and earth from spoil-bank at 25 cents per yard.»

In regard to the first, it is asserted « that the price is too low for the character of materials, and the narrow and intricate places from which it had to be taken.»

In regard to the second, it has been pointed out, « that the clay mixed with limestone gravel cements itself together if left alone for a little while, and has to be picked. That in this item is included the cost of filling and levelling where rooms were not required by original plan, and when walls were taken down to rock, filling and ramming around them».

In reference to the foregoing item N°. 1, we do not consider that any unusual difficulties were encountered in performing this work, and that the price allowed is sufficient for the depth and nature of the soil ; but admitting to some extent their statements, as applied to the deeper portions of the excavation, we allowed an additional price, viz, 60 cents per yard, which we consider sufficient to equalize the various character of this work.

Respecting the item N°. 2, the Contractors have evidently overlooked the fact that whilst carting from spoil-bank, and filling and levelling in the spaces referred to, is included in the price 25 cents, the ramming has been given separately : and the said price we therefore consider to

be sufficient. The sum allowed for ramming is shewn in bills accompanying estimate.

In rock excavation for which the following prices are allowed, viz : \$1.25, \$1.90 and \$2.25, averaging \$1.87, it has been claimed, «owing to the narrowness of the trenches and difficulty in getting it away, that the prices should be increased in same ratio as the excavation for sewers ».

In reference to this, we remark, that the earth being removed in mass down to the rock, the difficulties of trench excavation were considerably lessened, and the nature of the rock is such as will not admit of any increase in the prices given.

2. EXCAVATION IN SEWERS.—In making calculations upon the relative cost of excavation for these sewers, we took into consideration, from time to time, the various difficulties and expenses referred to by the contractors, and, after a careful consideration of the subject, we are still of opinion that a fair price has been allowed. The work will not admit of an average, as the class of rock in each is totally different ; that on the left-hand block being unstratified, and otherwise difficult to excavate, and for which a higher price was allowed, than that given for the right-hand block.

3. BRICK-WORK.—It is stated that « the market price for brick in Ottawa is \$7.50 to \$8.00 », and that « owing to the treacherous nature of the Ottawa clay, brick never can be made here as cheap as at other places ; moreover these brick contain a large portion, at least  $\frac{1}{4}$  waste, and that, from the character of the brick walls, a bricklayer can only build 750 bricks per day.»

We cannot admit any average, based on calculations in which the schedule prices under the contract are involved, such construction being totally irrelevant to the subject under consideration.

The Contractors further state, that « the cost of all brick-work has been increased by the addition of so many flues and arched-work not in the original contract. »

We have fully considered the increase in labor involved in the construction of the numerous flues in brick-work, and have allowed both the additional brick and labor connected therewith, but further experience shews that our original calculations of the price of brick-work have been overvalued by circumstances arising from the works themselves.

1st. From the increased price of brick, owing to the entire absorption of all that are manufactured in the district, and the necessity of their being imported from distant places.

2nd. The loss arising from the imperfect quality of the Ottawa clay, and from the transit and unloading of imported brick, together with the waste arising from the nature of the walls being more than proportionally perforated with flues, for purposes of heating and ventilation.

We, are therefore, of opinion that an increase in the price of extra brick-work may be made to the Contractors, taking also into consideration the great height at which some of it will be built, and that the sum allowed be \$14.40 per thousand, as follows :

|                                                     |         |
|-----------------------------------------------------|---------|
| First cost of brick, including waste, . . . . .     | \$ 8.00 |
| Mortar, and labor laying. . . . .                   | 4.00    |
|                                                     | <hr/>   |
|                                                     | \$12.00 |
| 20 per cent added for Contractors' profit . . . . . | 2.40    |
|                                                     | <hr/>   |
|                                                     | \$14.40 |
|                                                     | <hr/>   |

This price requires that all the brick used are picked hard brick ; but as an admixture of soft brick may be admitted in arch of warm air chambers, a decrease of 50 cents per M. may be made : shewing the total cost to be \$13.80 per M, which price we propose to be allowed from the 1st. of October ; and prior to that date, that \$12.50 per thousand be allowed.

MASONRY.—The contractors here draw an average based upon contract schedule prices ; this we cannot admit as the basis for any remarks we wish to make. We consider the price allowed for extra-walling in foundations and other works up to the ground level to be sufficient ; but in view of any extra-walling which may be built above the plinth, we are of opinion that the price should be increased for the following reasons :

1st. The walls, being incorporated with coursed masonry externally and being built hollow, the space between stone wall and inner wall of brick-work carefully protected, and free from mortar or other obstruction, an additional amount of labor is necessitated beyond ordinary walling.

2nd. The great height to which the walls will be carried, and the requirement of the contract that they shall be built from double scaffolding, will necessarily increase the labor beyond what is involved in stone-work below the plinth.

We therefore propose that \$9.36 be allowed for extra-walling, the thickness, 22 inches, being measured by the standard of 2 feet, as follows :

|                                          |        |
|------------------------------------------|--------|
| First cost of stone delivered . . . . .  | \$1.80 |
| Labor and mortar building. . . . .       | 4.00   |
| Scaffolding, tackle, ladders &c. . . . . | 2.     |

---

\$7.80

|                                           |      |
|-------------------------------------------|------|
| 20 per cent Contractors' profit . . . . . | 1.56 |
|-------------------------------------------|------|

---

\$9.36

OHIO STONE.—No item of this work has yet appeared in the estimates, but we propose the following, as the rate at which future extra-work shall be valued :

|                                             |    |                |
|---------------------------------------------|----|----------------|
| Ohio stone, cube measure . . . . .          | 80 | built in walls |
| Plain work rubble, per foot suppl . . . . . | 26 | " "            |
| " circular work do do . . . . .             | 32 | " "            |
| Sunk work . . . do do . . . . .             | 34 | " "            |
| Circular sunk . . . do do . . . . .         | 42 | " "            |
| Moulded work. . . do do . . . . .           | 46 | " "            |
| Circular moulded. . . do do . . . . .       | 60 | " "            |

N<sup>o</sup>. 6.—COLD-AIR-DUCTS.—After careful examination, and making up the cost of this material, taking also into consideration the circumstances attending the introduction of this class of work, we are of opinion that a fair price has been allowed.

On future work of this description, of which there is a considerable quantity prepared, and the facilities for preparing it being greater, we propose to make a reduction of 5 cents per foot, which we think will be equal relatively with the former price.

#### N<sup>o</sup>. 7. FLUES.

N<sup>o</sup>. 8. QUOINS.—It is alleged that the « original specification calls for limestone.» On referring to the first clause in the specification under the head of « cut-stone masonry », we find that all the stone used for dressings of the buildings is to be sand-stone from Cleveland, in the State of Ohio, or other approved quarries ; and although the word quoins is not specifically mentioned, yet the universal practice of including these under the head of dressings, and the spirit, intention, and meaning of the specification can admit of no other interpretation. See clauses 10 and 12 in contract applying to this case.

NEPEAN STONE.—It appears that owing to difficulties which have arisen, the quarry in which we first inspected this stone, and upon which our estimate of its value was based, is closed against the contractors, and

they have had to procure the stone from other quarries, in which additional labor and cost were involved in obtaining the stone that did not exist in the former quarry.

The principle of these is that in the quarry first visited, the stone was found in stratified beds or layers, varying from 2 inches to 12 inches thick, and consequently the beds were natural.

In the quarry now being worked the reverse occurs, and the stone for the most part is unstratified, requiring to be split up into the sizes in use on the building.

We do not offer any suggestion on this subject, as far as it relates to the order in Council ; but in reference to Nepean stone-facing on additional or extra-walling, we propose the price as allowed, viz, 35 cents per foot superficial, as in such cases we have to include the cost of the original limestone and dressing provided under the contract.

In measuring this work, we have not deducted openings of doors and windows, the additional labor in cuttings to quoins and window-joints being considered equivalent to them.

The above is respectfully submitted,

(Signed) STENT & LAVER,  
Architects.  
Departmental Buildings.

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No. 87.

OTTAWA, 21st February 1861.

John Page to  
Stent & Laver

Messrs. Stent & Laver,  
Architects.

GENTLEMEN,

I beg to acknowledge the receipt of your report on the statement submitted on the 31st ultimo, by Messrs Jones, Haycock & Co.

But previous to entering on the subject, I am desirous of having your opinion in reference to the prices estimated for the facing of the cold-air ducts and of the boiler-houses, as both seem to me high for such a class of work.

Your early reply will enable me to determine whether the various questions embraced in your report of the 20th instant, together with those now brought under notice can be at once disposed of, or if it will be necessary to submit them to the Department.

I may in conclusion remark that, if necessary, the same power exists for diminishing, as for increasing the rates hitherto paid for work « extra » of contract.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed) J. PAGE,  
Chief Engineer Public Works.

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No. 88.

OTTAWA, February 22nd, 1861.

*Stent & Laver to  
John Page.*

John Page, Esqr.

Chief Engineer,

Dept. Public Works.

SIR,

We have the honor to acknowledge the receipt of your letter of 21st instant, referring to the subject of our report on memoranda of prices submitted by Messrs. Jones, Haycock & Co., and requesting our opinion on the prices estimated for facing of the cold-air ducts and for the boiler-houses, the latter not being alluded to in contractors' statements.

In reference to the former we have again considered the prices proposed in our report, and are still of opinion that the reductions therein contained may be made on the ashlar when built, viz. 5 cents per foot ; such price being established from the close of building operations in November last.

With regard to arches for these ducts outside of building, not mentioned in our report, (no return having been made) we submit the following price which we propose to adopt, viz, \$1.05 per foot, the soffit only being measured. The whole of this is dimension-stone averaging 14 inches deep.

In reference to the dressed stone facing of boiler-houses, we have to remark, that this stone was taken from the excavation for sewers on right hand block, and found to be of sufficiently good quality for the purposes required, but produced in large and unshapely blocks, requiring more additional labor in working and setting than ordinary sized stone from the local quarries. Still it was deemed preferable to use it

in the building, to having to cart it some distance at an extra expense, and bring other stone from the Gloucester quarries, the only available place at which dimension-stone can be obtained.

The price hitherto allowed for this work is 90 cents per foot superficial, carrying beds and joints.

The stone for 5 feet above the footings being of greater cubical dimensions, we propose to retain the price of 90 cents as estimated, and for the remainder, we are of opinion that a reduction of 12 cents per foot on the face may be made.

We have the honor to be,

Sir,

Your obedient servants,

(Signed) STENT & LAVER.

Architects, Deptl. Buildings.

P. S.—We may here remark the dressed stone referred to is also measured as masonry.

S. & L.

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No. 89.

OTTAWA, 26th February, 1860.

John Page to  
Stent & Laver.

Messrs. Stent & Laver,  
Architects.

GENTLEMEN,

Having carefully examined your reports of 20th and 22nd instant, in reference to prices for certain items of additional work connected with the Departmental buildings under your charge, I agree with the suggestions therein contained, and consider they should, so far as applicable, be embodied in the estimate now being made.

I have the honor to be,

Gentlemen,

Your obedient servant.

(Signed) JOHN PAGE,  
Chief Engineer Public Works.



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**No. 90.**

QUEBEC, 3rd May, 1861.

52991.

Dpty. to Commisr.

SIR,

I have read Mr. Page's Report on the Public buildings at Ottawa with particular attention, and have given the most careful consideration to the statements, opinions, and recommendations which it contains. I have no doubt, from the length of time (four months and a half almost exclusively) he has devoted to an examination of the works on the spot, to an investigation of the plans and documents in the office, and to the verification of the measurements and estimates of the work done and of that still remaining to be performed, that he has obtained such a thorough knowledge of all matters connected with their cost, adaptation, and general supervision, as must qualify him for giving the most reliable information on all these points, and entitle his recommendations to great weight.

To begin, therefore, where he concluded, with the question of cost, as being at present the most material consideration, I have to remark that while, for reasons hereinafter stated, a certain amount of extra expenditure for the alterations and additions to the contract was to be anticipated, still, the Architects not having furnished this Department with any estimate of the probable cost of the works of this class, I was unprepared for the statement that they will so far exceed the amount of the contract price, as Mr. Page's estimate now shows.

The estimated gross cost, according to Mr. Page, of all the works now under contract and in progress, including several additional works recommended by him as necessary to the proper completion of the buildings, and providing for a supply of water and gas, is \$1,654,166.

The gross expenditure up to the first of May instant, upon all the works in progress, and the expenses incidental thereto, is \$531,854.

Understanding, however, that the object at present is to limit the expenditure on these works to the very least amounts that will suffice to finish the present contracts and the works indispensably necessary in connection therewith, I propose to give a statement, with that view, of the cost of completing these contracts, based on Mr. Page's estimates, and accompanied with such remarks as may be necessary briefly to explain the several items.

Taking, then, the three existing contracts, if we add 18 per cent, as done by Mr. Page, for superintendence and contingencies, their gross amount, about which there can be no question, will be :

|                                              |              |
|----------------------------------------------|--------------|
| 1st. Contract for Parliament buildings . . . | \$411,230.00 |
| 2nd. Do for Departmental buildings . . .     | 328,995.00   |
| 3rd. Do for heating and ventilation of all.  | 69,063.00    |

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|                                            |              |
|--------------------------------------------|--------------|
| Total amount of existing contracts . . . . | \$809,288.00 |
|--------------------------------------------|--------------|

---

To this amount is to be added the estimated cost of the works in progress authorized by the Department and in part paid for, but not included in the amount of these contracts.

### 1st. PARLIAMENT BUILDINGS.

The system of heating and ventilation not having been decided on when the building contracts were entered into, it was necessary to provide, in order not to interfere with the operations of the building contractors, that they should themselves execute all the mason's and bricklayer's work connected therewith; that they should construct the drains from the boiler-houses, the cold-air ducts and warm-air vaults, the flues in partitions for conducting the warm air to the several apartments, and those for carrying off the vitiated air, as stated in the last annual report of this Department. All the works of this class, not being fully known at the time, could not of course be entirely embraced in the prices of the original contracts for the buildings; but they were provided for to a certain extent, or as far as could then be anticipated. The difference between what is specified in the buildings and what has since been decided on as necessary may fairly be considered as additional to the contract price. These contractors have accordingly made considerable progress with the works connected with the heating and ventilation, enumerated by Mr. Page at pages 205, 206 and 207 of his report, which he estimates to cost, when completed, . . . . . \$136,000.00

The excavation and masonry connected with the sewers and drains are works additional to the contract, in consequence of having to sink them 11 feet below the contract line, for the reason stated by Mr. Page p. 212. . . . .

30,500.00

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|                        |              |
|------------------------|--------------|
| Amount carried forward | \$166,500.00 |
|------------------------|--------------|

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## PARLIAMENT BUILDINGS.

|                                                                                                                                                                                                                                                                                                                                                                                           |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Amount brought forward . . . .                                                                                                                                                                                                                                                                                                                                                            | 166,500.00          |
| The excavation, masonry, and filling up for foundations, additional to the contract. No test pits having been sunk before letting the contract, it was necessary to assume a base line for the footings ; for it would have been unjust to throw upon Contractors the risk of irregularities of the foundation. For works, then, below contract line Mr. Page estimates (p. 217). . . . . | 46,000.00           |
| Alteration in basement, authorized by the Department 12th December, 1859, to render rooms available (p. 218). . . . .                                                                                                                                                                                                                                                                     | 7,000.00            |
| Changes in position of entrance tower and in materials, ordered by the Architects. No authority from the Department (p. 218) . . . . .                                                                                                                                                                                                                                                    | 4,100.00            |
| Enlarging size of buttresses to library, authorized by the Deputy Commissioner in order to insure stability (p. 218). . . . .                                                                                                                                                                                                                                                             | 5,450.00            |
| Facing external walls with Nepean sand-stone instead of limestone as specified ; authorized by order in Council 2nd June, 1860, to insure employment of a durable material and lessen risks from fire (p. 218 and 219). . . . .                                                                                                                                                           | 18,360.00           |
| Total amount of additional works in progress . . .                                                                                                                                                                                                                                                                                                                                        | <u>\$247,410.00</u> |

## DEPARTMENTAL BUILDINGS.

|                                                                                                                                                                                                                                                                                                                                     |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| For excavation and masonry connected with the heating and ventilation for both blocks of the Departmental buildings, in progress, considered additional to the contract price for the same reasons as stated with respect to the Parliament buildings, and estimated to cost when completed (see pages 208 and 209 of Report) . . . | \$146,800.00        |
| For excavation and masonry connected with sewers and drains, additional to contract in consequence of the lowering of the plane of the boiler-houses, to adapt them to the system of heating and ventilation (p. 213). . . . .                                                                                                      | 79,000.00           |
| Carried forward . . . . .                                                                                                                                                                                                                                                                                                           | <u>\$225,800.00</u> |

|                                                                                                                                                                                                                                                                                                                                                                                                        |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Amount brought forward. . . . .                                                                                                                                                                                                                                                                                                                                                                        | \$225,800.00   |
| Changing position of principal fronts from Wellington street to the square, and re-arranging eastern end of eastern block. It was understood that the changing the position of the fronts would not involve any additional cost. The re-arrangement of the east end was done by the Architects without any order from the Department. Although the estimate is given, it is not approved (p. 226.) . . | 16,820.00      |
| Additional foundations below contract line ; for the same reason as in the Parliamentary building (p. 226.) . . . . .                                                                                                                                                                                                                                                                                  | 43,800.00      |
| Alterations in basement, authorized by the Department 12th December, 1859, to render rooms available (p. 227.) . . . . .                                                                                                                                                                                                                                                                               | 6,900.00       |
| Area walls, to light basement rooms ordered by Architects (p. 227.) . . . . .                                                                                                                                                                                                                                                                                                                          | 9,770.00       |
| Facing exterior walls with Nepean sandstone by order in Council 2nd June, 1860, (p. 228.) . . . .                                                                                                                                                                                                                                                                                                      | 31,400.00      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | <hr/>          |
|                                                                                                                                                                                                                                                                                                                                                                                                        | \$334,490.00   |
| Add 5 per cent for contingencies . . . . .                                                                                                                                                                                                                                                                                                                                                             | 16,720.00      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | <hr/>          |
| Total amount of additional works in progress . . .                                                                                                                                                                                                                                                                                                                                                     | \$351,210.00   |
| I have omitted from this list two items inserted by Mr. Page : one of \$2,310 for additional steps to entrance doors, and another of \$2,370 for increased height of eastern block ; because I do not understand why they should be considered as extra of the contract, and because no authority has been given for them by the Department, that I can discover.                                      |                |
| Recapitulating these estimated amounts, the gross amount of contract will be . . . . .                                                                                                                                                                                                                                                                                                                 | \$809,288.00   |
| The amount of additional works in progress, Parliamentary buildings . . . . .                                                                                                                                                                                                                                                                                                                          | 247,410.00     |
| The amount of additional works in progress, Parliamentary buildings . . . . .                                                                                                                                                                                                                                                                                                                          | 351,210.00     |
|                                                                                                                                                                                                                                                                                                                                                                                                        | <hr/>          |
| Total of contract and additional works in progress. :                                                                                                                                                                                                                                                                                                                                                  | \$1,407,908.00 |

The Chief Engineer has recommended several additional works as necessary to the proper completion of the buildings and fitting them for use, which are undoubtedly most desirable and worthy of consideration, and of which I recommend the following as indispensable to the safety and stability of the buildings.

|                                                                                                        |                |
|--------------------------------------------------------------------------------------------------------|----------------|
| Iron roofs to Legislative Halls . . . . .                                                              | \$16,000.00    |
| Strengthening walls of Library. . . . .                                                                | 4,500.00       |
| Additional buttresses to strengthen east work and<br>west walls, and alteration of sky-light . . . . . | 8,000.00       |
| Add. . . . .                                                                                           | 1,407,908.00   |
| <hr/>                                                                                                  |                |
| Total.                                                                                                 | \$1,436,408.00 |
| <hr/>                                                                                                  |                |

While it may be said that this is the least sum for which the works now in hand can be carried to completion, it may at the same time be confidently stated that they will not exceed that sum ; for it is to be observed that besides the prices being ample, and besides some items not fully approved being inserted, there is embraced in this estimate the large sum of \$137,413 for superintendence and contingencies.

In regard to the additional works, it is not to be inferred that because they are additional to the contract price, they could therefore have been dispensed with altogether, or that they ought to have been executed at the Contractor's expense. Had there been time to examine into and make choice of a proper system of heating and ventilation before the building contracts were let, and also to lay out the works upon the ground, sink test-pits down to the solid rock, and mature the plans on more accurate data, these additional works could then have been provided for and estimated correctly, and might have been specified and included in the present contracts ; but to have done this would have caused some months delay and the probable loss of an entire season before commencing operations, without in the end materially affecting the amount which would have to be paid for the requisite accommodation.

But, whatever view may be taken of this question, it is satisfactory to learn that the Chief Engineer reports his entire approval of the system of heating and ventilation which has been adopted, and considers there is every probability of its proving eminently successful, without having to resort to the objectionable mechanical appliance of a fan—a matter of no little importance to those whose health and comfort will be dependent

upon these vital arrangements; that the works which have been undertaken are indispensable; that they have been executed in a substantial and satisfactory manner; and that, although not all embraced in the original contracts, the country has full value for the outlay. Indeed the only fault to be found with them is that in some particulars they have been too well executed.

I have before alluded to other additional works recommended by the Chief Engineer as necessary for the more complete fire-proofing of the buildings, fitting them for use, and providing a supply of water and gas, and I now beg to add a list of them as worthy of consideration.

|                 |                                                                                      |                     |
|-----------------|--------------------------------------------------------------------------------------|---------------------|
|                 | 1. Water supply . . . . .                                                            | \$ 75,000.00        |
|                 | 2. Gas-fittings, bells, etc. . . . .                                                 | 12,000.00           |
| Parliament.     | 3. Fire-proofing ceilings of Committee-rooms. . . . .                                | 13,800.00           |
| Do.             | 4. Iron creting of roof. . . . .                                                     | 20,000.00           |
| Do.             | 5. Carving wood cornices . . . . .                                                   | 3,200.00            |
| Departmental.   | 6. Fire-proof ceilings . . . . .                                                     | 17,300.00           |
| Do.             | 7. Lead covering of roof, in lieu of felt, &c . . . . .                              | 29,350.00           |
| Do.             | 8. Finishing basement-rooms . . . . .                                                | 4,310.00            |
| Do.             | 9. Extension of north-west wing of western block, for further accommodation. . . . . | 27,000.00           |
| Do.             | 10. Erection of tower, eastern block, &c . . . . .                                   | 6,530.00            |
| Do.             | 11. For plate glass. . . . .                                                         | 4,350.00            |
|                 | Contingencies, &c. . . . .                                                           | 4,918.00            |
| Total . . . . . |                                                                                      | <u>\$217,758.00</u> |

None of these works have yet been contracted for, but it is evident that the Buildings cannot be used without a supply of water and gas. The Chief Engineer's suggestions in reference to these are important. The propriety of embarking in the other works should be considered and determined at an early day.

This leads to the question of superintendence.

It is evident, from the nature of this report, that this Department requires to exercise a closer supervision and control over the expenditure upon the spot; and I perfectly agree with the Chief Engineer as to the necessity of a monthly inspection by a competent officer of the Department, and of the appointment of a measurer, to insure accuracy and regularity in making out the Contractor's estimates. These works are of

no ordinary character, and consequently demand more than ordinary attention: I therefore recommend that his suggestion be adopted.

Permit me to observe, in conclusion, that in selecting the plans and making choice of the materials for these Buildings, the Legislature has imposed upon this Department duties which in England were assigned to a committee of the Legislative Body and to Royal Commissioners; but, however onerous these duties may be, I feel satisfied the Ottawa Buildings will prove successful and be considered a credit to the Province. My own views respecting them have been influenced by the consideration that in the erection of Public Buildings for a permanent seat of Government, as now fixed by law, they should themselves be permanent; and, while observing a prudent economy in the outlay, the Province can afford to provide all the accommodation its Legislative and Public Departments require, on a scale suitable to its condition, and at least not inferior to the Public Buildings it has erected in its chief Cities.

For fear of any misconception, I beg to record my opinion that the style of architecture of these Buildings, while it produces a dignified and appropriate effect, is the least expensive that could be selected, because it admits of the use of a large proportion of undressed native sandstone for the face walls: a material which is unsurpassed for durability and richness of color.

As illustrative of Mr. Page's concluding remarks, I beg further to state:

That the Houses of Parliament in England, covering  $4\frac{1}{2}$  acres of ground, were estimated to cost  $3\frac{1}{2}$  millions of dollars, but the actual expenditure was 14 millions of dollars. The extra work connected with the heating and ventilation alone cost upwards of one million of dollars.

The Houses of Parliament and Public Offices at Ottawa cover  $3\frac{1}{2}$  acres of ground; and if they can be completed for  $1\frac{1}{2}$  million of dollars, the cost for the large amount of accommodation provided cannot be considered excessive.

#### THE GOVERNOR GENERAL'S RESIDENCE.

No reference having been made in the foregoing to the works connected with the Governor General's residence, it is proper here to remark, that, these works not having as yet been placed under contract, copies of the plans have been furnished to the Contractor for heating and ventilation, who is now engaged in applying his system to them. When he has done this, it is proposed to refer them again to the Architects for their approval, as in the case of the other Public buildings, and thereupon to authorize



them to incur a limited outlay in laying out the work upon the actual site, and in instituting such an examination of the nature of the foundation, as will enable them to mature their plans more perfectly, and, as far as possible, to guard against extra works by including all that can be foreseen in these plans and specifications, and providing at the same time for sewerage and for a supply of water and gas. This will necessarily cause some delay in commencing operations; but the works in this case not being so extensive as those of the Parliament and Departmental buildings, it is believed they can be completed contemporaneously with the latter, if commenced within a reasonable time.

From the state of the expenditure upon the other Public buildings, it would seem to be necessary, before entering into this contract, that a further appropriation should be obtained.

All of which is respectfully submitted by,

Sir,

Your obedient servant,

SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

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No. 91.

No. 36658.  
Commissioner to  
Depty. and Chief Engr.

DEPARTMENT OF PUBLIC WORKS,

Quebec, 18th May, 1861.

The Commissioner begs to call the special attention of the Deputy Commissioner to the within report, this day received from the Chief Engineer.

The Commissioner has carefully perused Mr. Page's statements. With reference to the large amount claimed for extra work, he begs to call attention to the contract and the specifications, revised and approved of by the Architects and Deputy Commissioner before being signed.

The Commissioner is aware of no deviations, involving extra cost, being authorised by him, except :

- 1°. That for Nepean sandstone, directed by his Excellency in Council.
- 2°. The necessary excavation for heating and ventilating, the extent of which he was, however, never apprised of.
- 3°. The extra excavation to obtain a solid foundation.
- 4°. Some slight alterations in the basements.

He has now to request that the most stringent measures will be adopted by the Deputy Commissioner, in conjunction with the Chief Engineer, to prevent any changes or additional work of any description whatever, which may entail extra expense, being permitted, without the same being previously referred to and sanctioned by His Excellency in Council, on the recommendation of the Department.

The rules prescribed at the time the works were begun, as well as the terms of the contract, ought to have ensured this ; but they would appear to have been deviated from.

The Architects and Clerks of works were furnished with printed proofs, containing the forms in which alone the orders for any extra work should be given ; and it was understood these orders required the sanction of the Department before being acted on.

The Deputy Commissioner has the fullest authority to enforce this order, and will see that the Architects, Clerks of works, and all others are held strictly accountable.

These arrangements are purely professional, and must be entrusted wholly to the Deputy Commissioner and Chief Engineer.

The responsibility devolving on them, the Commissioner will be prepared to act in any way, on their recommendation, should they deem any changes or new course of proceeding desirable.

In connection with this, and to guard against similar difficulties with respect to the residence of the Governor General, the Commissioner requests the Deputy Commissioner and Chief Engineer to consider and report, with as little delay as possible, whether the plans and specifications of that building are imperfect to the same extent as those for the buildings now in course of erection would appear to have been.

If they are so, they will consider whether the real extent of work connected with the foundation, the heating and ventilation, the drainage, the lighting, the supply of water, bells &c., and all other things whatsoever necessary, cannot be ascertained now and embraced in the specifications.

They will also carefully examine these specifications, and report whether any, and what amount of extra work in other respects, such as strengthening walls &c., may be anticipated ; and provide, if possible, against it.

To do this, they are authorised to obtain such assistance, either from the Architects or otherwise, as they find necessary to modify or enlarge

the specifications and plans ; it being the intention of the Commissioner to bring the whole matter again under the consideration of His Excellency in Council.

(Signed) JOHN ROSE.

To the Deputy Commissioner  
and Chief Engineer.

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No. 92.

Sec'y. of Public Works  
to Sient & Laver.  
36678.

DEPARTMENT OF PUBLIC WORKS,  
Quebec, 11th May, 1861.

GENTLEMEN,

The Chief Engineer of this Department having been directed by His Excellency in Council to examine into all matters connected with the Ottawa Buildings, his report has now been delivered to the Department.

It would appear from that report that certain works have been performed, for which payment in addition to the contract price is claimed on the grounds that they are stated not to be embraced in the contract.

I am now to call your special attention to the terms of the contract and to the instructions which were given when the works were undertaken.

The 11th clause provides that work of a certain kind, though not mentioned in detail, is to be implied in the plans and specifications ; and the last clause specially provides that no change, alteration, or addition shall take place, and no extra work shall be done, without the written authority of the Commissioner, given prior to the execution of the work, and that no allowance will be made if it is done without such authority.

In addition to this, proper forms of printed orders were supplied at the time the works were begun.

It would, however, seem, from the Engineer's Report, that certain items are claimed for as extra, for which no orders, such as specified in the contract, were given, and some changes seem to have given rise to charges which were not contemplated.

Without, in the mean time, offering any opinion on the question whether these items are or are not to be considered as extras, I am now again to instruct you that no deviation whatever shall be permitted

from the contract, nor shall any further extra works be begun or allowed, until the Architects shall have reported beforehand both as to their necessity and cost, and the special order of the Department, in relation to them, shall have been obtained.

Whenever any change is suggested, it will be your duty to state whether that change will involve any and how much additional expenditure.

I am, &c.,

(Signed) T. TRUDEAU,  
Secretary.

Messrs. Stent & Laver,  
Architects,  
Departmental Buildings, Ottawa, C. W.

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**No. 93.**

**Sec'y. of Public Works  
to Faller & Jones.  
36684.**

DEPARTMENT OF PUBLIC WORKS,  
Quebec, 13th May, 1861.

GENTLEMEN,

The Chief Engineer of this Department having been directed by His Excellency in Council to examine into all matters connected with the Ottawa Buildings, his report has now been delivered to the Department.

It would appear from that report that certain works have been performed, for which payment in addition to the contract price is claimed on the grounds that they are stated not to be embraced in the contract.

I am now to call your special attention to the terms of the contract and to the instructions which were given when the works were undertaken.

The 11th clause provides that work of a certain kind, though not mentioned in detail, is to be implied in the plans and specifications; and the last clause, specially provides that no change, alteration, or addition shall take place, and no extra work shall be done, without the written authority of the Commissioner, given prior to the execution of the work, and that no allowance will be made if it is done without such authority.

In addition to this, proper forms of printed orders were supplied at the time the works were begun.

It would, however, seem, from the Engineer's Report, that certain items are claimed for as extra, for which no orders, such as specified in the contract, were given, and some changes seem to have given rise to charges which were not contemplated.

Without, in the mean time, offering any opinion on the question whether these items are or are not to be considered as extras, I am now again to instruct you that no deviation whatever shall be permitted from the contract, nor shall any further extra works be begun or allowed, until the Architects shall have reported beforehand both as to their necessity and cost, and the special order of the Department, in relation to them, shall have been obtained.

Whenever any change is suggested, it will be your duty to state whether that change will involve any, and how much additional expenditure.

I am, &c.

(Signed) T. TRUDEAU,  
Secretary.

To Messrs. Fuller & Jones,  
Architects,  
Parliament Buildings, Ottawa.

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**No. 94.**

QUEBEC, 14 May, 1861.

**Report to Council.**  
**36777.**

To His Excellency the Right Honorable Sir Edmund W. Head, Baronet,  
K. C. B. One of Her Majesty's Most Honorable Privy Council,  
Governor General of British North America &c., &c., &c.

May it please Your Excellency.

The Commissioner of Public Works has the honor to bring under the notice of Your Excellency the report of Mr. Page, the Chief Engineer, on the works at Ottawa, enquiry respecting which was authorized by order in Council on the 18th day of December last. The observations of the Deputy Commissioner on that report are also submitted.

In the advertisement calling for designs, issued by the Department of Public Works, the cost of the buildings was required not to exceed as follows :

|                                            |              |
|--------------------------------------------|--------------|
| The Parliamentary buildings. . . . .       | \$300,000.00 |
| The Departmental buildings . . . . .       | 240,000.00   |
| The Governor General's residence . . . . . | 100,000.00   |

The designs of the respective Architects, which were accepted by Your Excellency in Council, were afterwards placed into their hands to prepare the working drawings and specifications to be attached to the contract; and these, together with certain additions of fire-proof floors, authorized by Council, were embraced in the contract and included in the block sum for which the buildings were to be completed. The Department desired, as far as possible, by the terms of the contract, to guard against extra charges, and the Architects were supplied with these contracts, and required to govern themselves by their terms.

The extent of the works, such as excavation and blasting, and the masonry for the cold-air ducts, accessory to the heating and ventilation, does not seem to have engaged the attention of the professional parties responsible for the work, at the time the specifications were prepared ; nor to have been anticipated by them to be of such magnitude as seems to be considered necessary when they came to be actually in progress, inasmuch as no comprehensive report of their nature or extent was made to the undersigned. The amount of extra work for those objects, (excavation, masonry &c.) appearing from time to time at the close of the last year, served, however, to bring them incorrectly to his notice, and the Chief Engineer was thereupon despatched to make a full report. This report, for the first time, served to convey a comprehensive statement of the real position and extent of the works. It would now appear that these works, as well as the extra excavation for the foundations, rendered necessary by the irregularity of the rock foundation, the Chief Engineer and Deputy Commissioner consider indispensable ; that they are extraneous to the contract ; and that the prices recommended by him are not excessive.

The special points which now require the attention of the Council are these :

I. Certain work, stated to be extra, which has been performed in the manner stated, and prices allowed by the Architects, without direct authority from the Commissioner.

II. The further performance hereafter of work of the same character not embraced in the contract, which is stated to be indispensably necessary.

III. Certain suggested items of extra work or alterations considered desirable, but which do not seem indispensable.

IV. The adoption of the most efficient arrangements possible for preventing outlay of any description for the future, beyond what the contracts provide, or which may be absolutely necessary.

It would, doubtless, have been more satisfactory if all the work necessary for excavating, heating and ventilation had been ascertained beforehand by the professional and responsible parties, and embraced in one contract with the buildings ; and also that the character of the foundations had been tested, so that parties tendering would have included the whole work in one offer ; but the urgent desire manifested by Council to proceed with the works is assigned as a reason why this course was not adopted. The ultimate cost would probably not have been lessened, as stated by the Chief Engineer, it would only have appeared in the contract price, instead of under the head of extra work.

So far as providing the necessary ducts for the hot and cold air, they would appear to be indispensable, and such parts as are yet incomplete must be proceeded with ; care being taken that the amount of work is kept within the limits of strict necessity, and that the prices paid, and to be paid, are no more than authorized by the contract. When this item of work is completed and can be accurately measured, it is recommended that the Contractors be finally closed with for it in terms of the contract, as also for the extra excavation and masonry necessary and ordered for the foundations.

The Commissioner would now allude to the four points to which he has directed special attention.

I. Certain work, stated to be extra, which has been performed, and prices allowed by the Architects without direct authority from the Commissioner. These are :

1st. The change in position of the front of the Departmental buildings.

The change was recommended by the Architects and Deputy Commissioner, and assented to ; but it was not intimated that it would involve any additional cost. On the contrary, it was considered by the undersigned as coming within the first clause of the contract, which provides that the building shall be placed « on such portion of Barrack Hill as may be pointed out to the Contractors. »

The mere change of position cannot be admitted as giving a claim for increasing the price, unless the building was enlarged beyond the original plans. No authority having been given for any extra price, the charge made cannot be admitted.

2nd. Alterations made in the basements and area walls.

The expense of this item, it was represented, would not involve additional expenditure, but to a very limited and insignificant sum ; and the charges made are open to discussion.

3rd. Position of entrance tower. No authority for this, as an extra, was given.

4th. Enlarging buttress to Library.

The Deputy Commissioner reports that this was considered necessary for the stability of the work, and that he gave informal sanction to the Architects ; but the undersigned cannot but remark that this should have been foreseen.

II. The further performance of work not embraced in the contract, which the Chief Engineer seems to consider indispensably necessary.

This, in the opinion of the undersigned, should be confined entirely to the class of work necessary to the heating and ventilation ; and that nothing whatever should be done for ornament or mere effect ; continuous supervision should be exercised to keep it within the strictest limits of necessity.

III. Certain suggested items of other extra work or alterations, numbered in the report of the Deputy Commissioner from 1. to 11, and estimated to cost \$217,758.00.

The first two only—1st, Supply of water ; 2nd, Gas fittings and bells—are considered indispensable. The undersigned, at present, offers no further opinion as to the best and most economical mode of supplying water, than to recommend that communication should be had with the City authorities for the purpose of ascertaining whether the same works could not be rendered available both for the City and Public Buildings.

With respect to the other items, the undersigned entertains a strong opinion that no further change or alteration of any description should be permitted. If it is found that the designs are imperfect in any details, it is assumed that the contract, (vide clause 2.) ought to cover such cases ; but if it does not, then only what is indispensably necessary to give the building proper strength should be allowed.

Some of the alterations in themselves may, no doubt, be desirable



to make the buildings more perfect ; but when it is considered that the appropriation is limited, the undersigned cannot, without reference to and the sanction of the Legislature, authorize any outlay beyond it, on works which might be dispensed with.

IV. On the measures to be adopted for preventing future outlay &c.

The arrangements which were made in the first instance, ought, if carried out by the proper parties, to have prevented any expenditure beyond the contract sum without the authority of the Department. In no case has that direct authority been given, except : firstly, in regard to the facing with Nepean sandstone ; secondly, to deepen the excavation for the foundations ; and thirdly, to alter the basements. The first was done by command of Your Excellency in Council ; the second Departmentally, as indispensably necessary for the safety of the building ; and the third as an unimportant change, which would give the additional number of rooms required, at the smallest possible expense.

In the other instances, as would appear from the reports of the Deputy Commissioner and Engineer, the positive rule of requiring the order of the Commissioner has been departed from by the Architects and Clerk of the works, and the undersigned cannot advise Your Excellency to sanction the charges without fuller investigation. As to the prices at which any extra work actually ordered should be paid, the provisions of the contract and the rates there specified, where applicable, should be adhered to. The undersigned sees no other means by which the instructions can be enforced, than by placing a responsible officer of the Department in special and immediate charge, whose duty it shall be to visit the works as frequently as may be necessary, for the purpose of exercising a continuous and systematic supervision over the operations. This officer should have authority, and be required to see that the respective duties devolving on the Architects, Clerks of works, foremen, and others are, properly performed ; that the estimates are correctly and clearly made out ; and that no work whatever is undertaken, or change authorized, which shall involve extra payment, without the direct written sanction of the Government.

He further recommends that, in the mean time, the charges made for such works as are stated to be extra or which have not been so ordered, be held in abeyance and be not allowed ; but that the payments made be considered as made on account of works generally ; and that the final determination of recognizing the works which do not fall

within the category of those above mentioned as extra, shall remain in abeyance until the contract is completed, and a final settlement made with the contractors.

(Signed) JOHN ROSE,  
Commissioner.

## No. 95.

Order in Council.

52132.

Copy of a report of a Committee of the Honorable the Executive Council, approved by His Excellency the Governor General in Council, on the 15th May, 1861.

On a memorandum, dated 14th May, 1861, from the Honorable the Commissioner of Public Works, submitting a report from Mr. Page, Chief Engineer of his Department, with the remarks of the Deputy Commissioner thereon, in reference to the general progress and character of the works at the Parliamentary and Departmental buildings at Ottawa, enquiry respecting which was authorized by order in Council of the 18th December last.

The Commissioner, in his memorandum (thereunto annexed), reports the measures and action he has taken and those he suggests should be adopted, both in regard to limiting the future expenditure, as far as practicable, and the other objects to which he therein refers; and the Committee submit their entire concurrence in the steps taken and suggestions offered by the Commissioner, and recommend the same for Your Excellency's approval. They further advise that the duty of visiting the buildings and exercising the supervision required be, in the meantime, performed by the responsible officer of the Department, whose duty it shall be to see that the Architects carry out the terms of the contract, and that authority be given, if need be, to suspend either the Architects or Clerks of Works, or both, in the discretion of the Honorable the Commissioner of Public Works.

Certified,

(Signed) WM. H. LEE,  
C. E. C.

To the Honorable

The Commissioner of Public Works,

&c., &c., &c.

**No. 96.**

**Secy. of Public Works  
to Deputy.  
36784.**

**DEPARTMENT OF PUBLIC WORKS,****Quebec, 16th May, 1861.**

The Order in Council of the 15th instant is herewith enclosed to the Deputy Commissioner for his information ; his attention is also called to the Departmental Order of the 4th instant. He will proceed to Ottawa as soon as possible, with the Chief Engineer or Assistant Engineer, and his duty will be, in the first place, to see that proper arrangements are made to carry the commands of His Excellency in Council and the requirements of the Departmental order (N°. 91) into effect ; to see that the expenditure hereafter is kept within the strictest possible limits ; to enquire and report in what way any works now in progress, which are not within the strict terms of the contracts, can be curtailed or stopped.

He will also give his attention generally to all matters referred to in the report of the Chief Engineer ; and, after he has had an opportunity of satisfying himself of the efficiency or otherwise of the parties engaged in the superintendence of the works, he will report whether any or what changes should, in his opinion, be made, and he is fully authorized to carry them, provisionally, into effect.

The order in Council and the Departmental Memorandum so fully enumerate the various objects which the Government require to be carried out, that it is deemed needless to repeat them ; but it is of the first necessity to provide against any future expenditure not authorized by the contracts.

I am &c.,

(Signed) T. TRUDEAU,  
Secretary.

To S. Keefer, Esquire.

Deputy Commissioner of Public Works.

## REPORT BY S. KEEFER,

*Deputy Commissioner,*

IN ANSWER TO INSTRUCTIONS CONVEYED TO HIM IN N°. 96.

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No. 97.

Quebec, 17th June, 1861.

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Deputy to  
Sec'y. of Public Works.  
53743.

SIR,

In compliance with the Departmental order of the Commissioner of the 16th ultimo, I left Quebec for Ottawa on the 20th May, accompanied by the Assistant Engineer of the Department, for the purpose of giving my personal attention to the works in progress on the Public Buildings in that City, and taking such action in relation to them as this order called for.

In the performance of this duty, I remained there until recalled by the late Commissioner to this office, to which I returned on the 10th instant.

I have now to report, for the information of the present Commissioner, the action taken under my instructions during the time of my absence.

In reference to works in progress.

1st. I considered it my duty, first of all, to put a stop to all works not included in the contracts for the Buildings—as far, at least, as this could be done without hindrance to the carrying out of those contracts—no matter how desirable or indispensable they might be.

With this view I addressed letters to the Architects, dated 25th May, of which N°. 1 and 2, accompanying this, are copies. The effect of this has been to stop all works connected with the heating and ventilation which lie *outside* of the external walls of the buildings, as well as those connected with the drains leading from the boiler-houses down to the river.

In these letters I also called upon the Architects for estimates for the completion of all such additional works, both inside and outside the buildings, from the date of their next estimate (1st June, 1861). Their

replies, when received, will accompany my next report on these buildings, when I shall give the cost of work done and remaining to be done upon them.

2nd. Having learned that the Contractors for the Departmental buildings had begun some work for finishing off the rooms in the basements, not included in their contracts or any previous order of the Commissioner, I addressed an order, dated 28th May, to the Architects in charge (of which N°. 3 is a copy), that this work should be stopped.

The order has been complied with.

3rd. The Architects of the Departmental buildings submitted to me a model of a proposed alteration in the porch of the Governor General's entrance to the right-hand block, which is referred to in their letter, N°. 4. This change was authorised by letter N°. 5 the same day, in pursuance of the provisions of the first and last clauses of the contract, upon the express understanding that the Contractors were not to be paid anything extra for it.

The advantage to be gained by it is greater simplicity of construction, with increased stability and durability to the work.

4th. The Chief Engineer of the Department having, in his report on the Parliamentary buildings, drawn the attention of the Commissioner to the necessity of strengthening certain walls to insure their perfect safety, I addressed a letter No. 6), dated 3rd June, to the Architects, on this subject, calling their immediate attention to his several recommendations under this head.

To this they replied by theirs (N°. 7) of the 7th June, expressing in general terms their concurrence with his recommendations, and indicating the manner in which they proposed to carry them into execution.

The works had arrived at that stage, when, if any change was to be made, an immediate decision was necessary. It was only in one or two instances that these changes involved additional outlay; had there been time to apply for, and a prospect of receiving an immediate reply, the question would have been referred to the decision of the Commissioner. But, under the circumstances, I would not assume the responsibility either of suspending the work pending the decision, or of allowing it to proceed against the opinion of the Architects and Chief Engineer, as well as my own; and, therefore, acting under the recommendation of the Commissioner's report, approved by the order in Council of the 15th May, that only « what is indispensably necessary to give the

« buildings proper strength should be allowed », authority was given by letter (N<sup>o</sup>. 8.) dated 8th of June, for proceeding with the alterations recommended by the Chief Engineer and the Architects in charge.

5th. In a letter dated 6th June (N<sup>o</sup>. 9), the Architects of the Departmental buildings recommended an alteration in the mode of constructing the archways leading from the corridors to the staircases, by the substitution of piers and arches for wrought-iron girders ; and stated that a slight saving to the Department would be effected by it, while a great improvement, both in regard to appearance and stability, would be secured. It was therefore authorized by the letter (N<sup>o</sup>. 10) dated 7th June.

From the foregoing it will be observed that the action thus far taken in reference to the works in progress, has been mainly directed to confining the Contractors strictly to the execution of their contract work, by stopping all extra works as far as practicable: taking care, at the same time, that nothing is neglected which is essential to the stability of the buildings.

The extra or additional works thus suspended may form the subject of a special agreement hereafter with the present Contractors, or be opened to competition in case an agreement can not be made.

#### II.—IN REFERENCE TO SUPERINTENDENCE.

Firmly impressed with the conviction that the best and safest course for the Department is to continue to hold the Architects in charge responsible for the carrying out of their own plans under existing contracts, all my orders in reference to works in progress were addressed directly to themselves, and by them communicated to the contractors ; and they were, for the most part, based upon their own recommendations. The letters defining the duties of the Clerks of the works and Measurers were also communicated to them, and they were duly informed that these officers would act entirely under their orders.

In reference to the duties of the Clerks of works, it may be remarked that at the first commencement of the works, when their duties were comparatively light, it was thought a good arrangement to have a person of Mr. Morris' well known experience, under the Architects, to look after the execution of the works both on the Parliamentary and Departmental buildings, with such further assistance from time to time as the occasion required. But although this arrangement presented some advantages, and might answer for a time at the starting of the works, it was not suit as the Chief Engineer points out, to afford satisfaction as they

became more advanced. The necessity for a division of duties and a closer supervision became apparent, and it was found to be a great inconvenience for an officer to act at the same time under the orders of different Architects.

It was therefore decided to confine Mr. Morris' attention entirely to the Parliament buildings, and to place him exclusively under the orders of the Architects of those buildings, without allowing him to exercise any authority over the other Clerks of the works.

To admit of these officers giving a closer attention to the execution of the works, they were to a certain extent relieved from making out the details and results of measurements; and two Measurers have been appointed, whose duty it is, under the Architect's instructions, to attend exclusively to the measurement of all classes of work, both being held responsible for their correctness.

Mr. John Bowes, of Kingston, was appointed Measurer of works for the Parliamentary buildings, and Mr. John Henry Pattison, of Toronto, was appointed Measurer of works for the Departmental buildings.

The Architects were duly informed of these arrangements, and these officers have entered upon their duties and made their first measurement for the May estimate.

The staff for the superintendence of the Public buildings at Ottawa at present consists of the following persons:

For the Parliament buildings, Messrs. Fuller & Jones, Architects, whose pay is fixed by Order in Council at five per cent on the contract; no allowance being made for extras. Under them are:

|                                           |                |
|-------------------------------------------|----------------|
| John Morris, Clerk of works, salary . . . | \$1200 a year. |
| John Grist, " " . . .                     | 83½ a month.   |
| Joseph Larose, " " . . .                  | 3 a day.       |
| John Bowes, measurer, " . . .             | 83½ a month.   |

For the Departmental buildings, Messrs. Stent & Laver, Architects, who are paid five per cent on the contract; no allowance being made for extras. Under them are:

|                                                |                |
|------------------------------------------------|----------------|
| William Hutchison, Clerk of works, salary. . . | \$83½ a month. |
| George B. Pelham, " " . . .                    | 60 "           |
| John Henry Pattison, measurer, " . . .         | 83½ "          |

At the beginning of this month, there were about one thousand men employed upon the buildings, including carvers, stone-cutters, masons, bricklayers, blacksmiths, laborers, and teamsters. The works were going on well.

In conclusion, I beg to observe that I have as yet accomplished only a part of the duty under my instructions; and that as soon as the business of the office will permit, I propose to return again to Ottawa, to observe the operation of these new arrangements, and carry out the rest of the objects referred to by the Commissioner.

Respectfully submitted,

SAMUEL KEEFER,

Deputy Commissioner of Public Works.

T. Trudeau, Esquire,  
Secretary of Public Works,  
Quebec.

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No. 98.

Deputy to  
Fuller & Jones.

APPENDIX.

OTTAWA, 25th May, 1861.

GENTLEMEN,

I have the honor to inform you that I have received instructions from the Commissioner of Public Works to visit the Public Buildings now in course of erection here under your directions; to see that proper arrangements are made to carry the commands of His Excellency in Council, and the orders of the Department, into effect; to see that the expenditure hereafter is kept within the strictest possible limits; and to enquire into and report in what way any of the works now in progress, which are not within the strict terms of the contract, can be curtailed or stopped.

In compliance with the instructions, I deem it necessary, in the first place, to request that you will at once suspend all works connected with the heating and ventilation, which lie *outside* of the external walls of the buildings, as well as those connected with the main drain leading from the boiler-house down to the river.

As these works are not strictly included in the building contract, and as their suspension will in no way hinder the carrying out of the contract plans for the Parliament building, the Departmental order requires that they should be stopped; but inasmuch as they are necessary to the



proper completion of the system of heating and ventilation, and will have to be finished before the buildings can be used, you will please furnish me with an estimate of the cost of what yet remains to be done, in order that proper authority may be obtained for the same, before any further expenditure takes place upon them.

1st. An estimate for completing the cold-air ducts *outside* the buildings.

2nd. An estimate for carrying the drain from its present termination at the brow of the hill, down to the river.

3rd. I have also to request that you will furnish me with an estimate for the completion of the works connected with the heating and ventilation (which fall *within* the buildings from the date of the next estimate, 1st June next) ; namely, for completing the warm-air vaults, the cold-air ducts, hot-air flues, ventilating ducts and towers, and the setting and roofing of the boilers.

If there is any portion of these works which can be suspended without hindrance to the fulfilment of the building contract, you will be so good as to particularize them, and state their probable cost.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Commr. Public Works.

Messrs. Fuller & Jones,

Architects,

Parliamentary buildings, Ottawa.

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No. 99.

Deputy to  
Stout & Laver.

OTTAWA, 25th May, 1861.

GENTLEMEN,

I have the honor to inform you that I have received instructions from the Commissioner of Public Works, to visit the Public buildings now in course of erection here under your directions ; to see that proper arrangements are made to carry the Commands of His Excellency in Council

and the orders of the Department into effect; to see that the expenditure hereafter is kept within the strictest possible limits; and to enquire into and report in what way any of the works now in progress, which are not within the strict terms of the contract, can be curtailed or stopped.

In compliance with these instructions, I deem it necessary, in the first place, to request that you will at once suspend all works connected with the heating and ventilation, which lie *outside* of the external walls of the buildings, as well as those connected with the main drains leading from the boiler-house down to the river. As these works are not strictly included in the building contract, and as their suspension cannot in any way hinder the carrying out of the contract plans for the Departmental buildings, the Departmental order requires that they should be stopped; but inasmuch as they are necessary to the completion of the system of heating and ventilation, and will have to be finished before the buildings can be used, you will please furnish me with an estimate of what remains to be done, in order that proper authority may be obtained for the same, before any further expenditure takes place upon them.

1st. An estimate for completing the cold-air ducts *outside* the buildings.

2nd. An estimate for carrying the main drains from their present termination at the brow of the hill, down to the river.

3rd. I have also to request that you will furnish me with an estimate for the completion of the works connected with the heating and ventilation which fall within the buildings, from the date of your next monthly estimate (1st June next); namely, for the completion of the warm-air vaults, the cold-air ducts, hot-air flues, ventilating ducts and towers, and the setting and roofing of the boilers.

If there is any portion of these works, or of any other extra works, such as the making of additional rooms in the basements, that can be suspended without hindrance to the fulfilment of the building contract, you will be so good as to particularize them, and state their probable cost.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed) SAMUEL KEEFER,

Deputy Commissioner of Public Works.

Messrs. Stent & Laver,

Architects,

Departmental buildings, Ottawa.

**No. 100.**

OTTAWA, 28th May, 1861

Deputy to  
Stent & Laver.

GENTLEMEN,

I have just learned from Mr. Pelham that the Contractors for the Departmental buildings have begun to make the doors for all the rooms in the basements, including those for the additional as well as for the contract rooms.

As no order has been issued from the Department for the finishing of these additional rooms, I have to request that you will at once stop all work for the finishing of them, and confine the attention of the Contractors entirely to those embraced in the contract.

The order given in December, 1859, only required that « openings « should be left in any of the enclosures of the basement of both blocks, « where the foundation walls are of sufficient height to render these en- « closures available as rooms for future use ». The finishing of these rooms at present was neither contemplated nor authorized.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed) SAMUEL KEEFER,

Deputy Commissioner of Public Works.

Messrs. Stent &amp; Laver,

Architects.

Departmental buildings, Ottawa.

**No. 101.**

OTTAWA, May 31st, 1861.

**Stent & Laver**  
to Deputy.

Samuel Keefer, Esquire,  
Deputy Commissioner,  
Department of Public Works,

SIR,

We have the honor to draw your attention to a proposed alteration in the construction of the porch at the Governor General's entrance on the eastern Departmental buildings, a plan of which was recently submitted for your approval.

We have ascertained that the said alteration and extension will not involve any additional outlay, as the nature of the works suggested will be simpler in form than those proposed by the contract plans and detail drawings to be furnished by us.

As this work requires to be proceeded with at once, we shall be glad with your approval, or otherwise, of the proposed alteration.

We are, Sir,

Your obedient servants,

STENT &amp; LAVER.

**No. 102.**

OTTAWA, 31st May, 1861.

**Deputy to**  
**Stent & Laver.**

GENTLEMEN,

I have the honor to acknowledge the receipt of your note of this day's date, informing me that you have ascertained that the proposed alteration of the porch at the Governor General's entrance to the eastern Departmental buildings to which you drew my attention yesterday, as tending to simplify the groining, and give additional stability and durability to the porch, will not involve any additional outlay.

This being the case, you are hereby authorized to make the proposed change, on the express understanding that the Contractors are not to be paid anything extra for it.

I have the honor to be,  
Gentlemen,  
Your obedient servant,

SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

Messrs. Stent & Laver,  
Architects,  
Departmental buildings, Ottawa.

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**No. 103.**

Deputy to  
Fuller & Jones.

OTTAWA, 3rd June, 1861.

GENTLEMEN,

The Chief Engineer of the Department has drawn the attention of the Commissioner to some questions affecting the stability of certain portions of the Parliament buildings, accompanied by recommendations, which, in the present state of the works, it is important you should be apprised of.

1st. In reference to the Library, he states that although the vertical walls of the structure, strengthened by the outside buttresses as shewn in the model, are theoretically strong enough to resist the thrust of the arched roof over them, it would, nevertheless, in his opinion, be judicious to allow practically a still greater margin; and recommends that the walls of the Library be increased six inches in thickness throughout, and that the outside buttresses be also made six inches thicker than previously authorised. The probable cost of which he estimates at \$4,500.

2nd. He recommends also that the hollow space between the interior brick lining and walls of the six angle towers, on the front and returns, should be omitted, especially at their connections with the inside division walls.

3rd. Also, to add another tier of wrought-iron chain bond to the central tower, immediately over the main entrance arch.

4th. Also, the construction of the buttresses to the inner Court between the two houses; and for the east, north, and west external walls around the same.

The work having now arrived at that stage, when, if any alteration is considered necessary to ensure stability at these points, an immediate decision should be come to, I beg you will give your immediate attention to the subject, and favor me with your opinion as to the necessity, or otherwise, of carrying out any or all of these recommendations in whole or in part; and that you will furnish me with an estimate of the cost of what you may recommend, over and above the contract price.

I have the honor to be,

Gentlemen,

Your obedient servant

(Signed) SAMUEL KEEFER,  
Deputy Comr. Pub. Works.

Messrs. Fuller & Jones,

Architects,

Parliament buildings, Ottawa.

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No. 104.

Fuller & Jones,  
to Deputy.

PARLIAMENT BUILDINGS,

Ottawa, June 7th, 1881.

SIR,

We have the honor to acknowledge the receipt of your favor of the 5th instant, apprising us of several recommendations from the Chief Engineer as regards the thickening of certain walls and buttresses, and requesting our opinion as to the necessity, or otherwise, of carrying out any or all of the recommendations.

Nº. 1.—To the thickening of the walls of the Library and the outside buttresses, estimated by the Chief Engineer at four thousand five hundred dollars (\$4500.00). We concur in the opinion of the Chief Engineer

that these walls and buttresses may be now more than sufficient to resist the thrust and weight, still it would be judicious to have an excess of strength.

The wall of the Library referred to is to be built of brick ; we presume, therefore, that it would be necessary to thicken one brick.

We think that instead of thickening the buttresses six (6) inches all round, it would be more advantageous to retain the width, say 4 feet, and give an extra projection below the string course on the top of the plinth of two feet ; and above that, and up to the underside of the pinnacles, a projection of one foot three inches.

We have made an estimate of the cost, and believe that it would not exceed the sum of four thousand seven hundred dollars (\$4700.00).

N°. 2.—Recommending that the hollow space between the brick-lining and stone walls of the six angle towers should be omitted. Additional strength would thus be obtained ; but we consider that it would be better to build the walls of stone and line it with a  $4\frac{1}{2}$  inch brick, as the iron joists will, in that case, have a direct bearing on the outside stone walls, and thus form an additional tie. We do not consider that this would entail any extra cost.

N°. 3.—Recommending another tier of wrought-iron chain bond to the central tower, immediately over main entrance arches.

We have ordered the Contractors to place in this position one of the tiers of chain bond proposed to be used higher up by the contract plans ; as the work proceeds, we shall be able to judge if it will be necessary to use an additional chain bond.

N°. 4.—Construction of buttresses in central court : this we consider absolutely necessary, owing to the great additional height of the walls the boiler-house being sunk below the original contract level ; and estimate the cost at about \$1000.00.

In a letter addressed to the Department, dated 5th April, 1861, we enclosed a tracing of an alteration we proposed in the north and west walls of rooms adjoining Legislative Assembly, and north and east walls of the Legislative Council, and the mode of lighting the corridors &c., at an estimated cost of about \$8,000.00. In compliance with your instructions we have reconsidered the subject with the view of reducing the amount, and have to report that although much external effect, and of course great additional strength, will be lost if the buttresses are not used, we believe that sufficient additional strength will be obtained by building the walls solid, as recommended for six angle towers,

which would not be an increase on the contract ; but we consider that the alterations to the skylights would be very desirable, and estimate the additional cost at about \$5000.00.

We have the honor to be,

Sir,

Your obedient servants,

(Signed) FULLER & JONES,  
Architects.

To Samuel Keefer, Esq.,

Deputy Comr. Pub. Works, Ottawa.

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**No. 105.**

OTTAWA, 8th June, 1861.

Deputy to  
Fuller & Jones.

GENTLEMEN,

I have duly received your letter of yesterday's date, in reply to mine of the 3rd instant, on the subject of the recommendations of the Chief Engineer of the Department, for strengthening some of the walls of the Parliament buildings.

In this letter you express in general terms your concurrence with these recommendations, and indicate the manner in which, in each instance, you would propose to carry them into execution.

The works in progress under the contract having now arrived at that stage, when, if any change is to be made, an immediate decision is necessary, I beg to state that I agree with you, as the Architects of the Buildings, and with the Chief Engineer, as to the propriety of certain alterations for ensuring the perfect stability of the works; and having been authorized by my instructions to take such action in reference to the works now in progress as in my judgment appeared advisable under the circumstances, I have to request you will give the necessary orders to the Contractors for the following alterations:

I. The walls and buttresses of the Library to be strengthened in the manner you propose in your letter of the 7th instant.



II. The walls in the six angle towers to be built solid, in the manner you suggest.

III. A tier of wrought-iron chain bond to be added to the central tower, immediately over the main entrance arches ; leaving it for future consideration, as the work advances, whether this shall be taken as one of the contract bonds, or whether another shall be used.

IV. The construction of buttresses to the central court, rendered necessary by the great height of the walls.

V. Building the external walls of the north, east, and west sides of the two Legislative Chambers solid, to give them additional strength, as in the six angle towers.

The alteration of the skylight, to which you refer, I believe to be a most necessary measure ; but as there will be time enough to submit this with some other works for the Commissioner's decision before they are commenced, you will take no steps in regard to them until further instructed.

I have the honor to be,

&c., &c., &c., &c.,

(Signed) SAMUEL KEEFER,

Deputy Commissioner of Public Works.

Messrs. Fuller & Jones,

Architects,

Parliament Buildings, Ottawa.

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**No. 106.**

**Stent & Laver**  
to Deputy.

OTTAWA, June 6th, 1861.

SIR,

We have the honor to draw your attention to a proposed alteration in the construction of the archways leading to the staircases from the corridors.

The contract plans in this particular not appearing so structural as could be desired, being arranged to form pendants supported by wrought-iron girders, on which the cross joists of the corridor rest :

We would therefore propose, in view of the above, to carry up from the wall below, on the ground floor, brick piers and arches formed and finished in Reeve's or Martin's cement, thereby dispensing with girders, together with the necessity of bolting the cross joists to the same.

This, we estimate, will not entail an extra, but, we consider, will be a slight saving to the Department, besides forming a more important feature on entering these portions of the building.

It being desirable to carry on this portion of the work, we should be glad of permission to construct it as soon as possible, if deemed advisable.

We have the honor to be,

Sir,  
Your obedient servants,

(Signed) STENT & LAVER,  
Architects, Departmental Buildings.

To the Assistant Commissioner,  
of Public Works.

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No. 107.

OTTAWA, 7th June, 1861.

Deputy to  
Stent & Laver.

GENTLEMEN,

With respect to the proposed alteration in the construction of the archways leading from the corridors to the stairways, referred to in your letter of yesterday and previously discussed by us in connection with the plans, I can safely add my concurrence with your opinion and statement, that, by employing arches instead of wrought-iron girders, and dispensing with the pendant ornaments, a great improvement will be effected both in regard to the appearance and stability of the works, without any increase of expense.

Having been informed that these wrought-iron girders have not been ordered, and having been assured that, by your estimate, there will be a slight saving to the Department by the alteration, and being satisfied that such is the case, I feel myself warranted by my instructions in giving

you the necessary authority for proceeding with it, and in requesting you to furnish the Contractors with a written order for the same, provided you are assured that the iron girders have not been purchased.

I have the honor to be,

Gentlemen &c., &c.,

(Signed) SAMUEL KEEFER,

Deputy Comr. Pub. Works.

Messrs. Stent & Laver,

Architects.

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No. 108.

Deputy to  
Fallis & Jones.

OTTAWA, 28th May, 1861.

GENTLEMEN,

The attention of the Department has been drawn by the Chief Engineer in his recent report on the works under your charge, to the question of superintendence; setting forth the necessity that exists for certain changes in the duties of the Clerks of the works, and for the appointment of a person to attend specially and exclusively to the measurements, and to assist you in making out the estimates.

This report having received the consideration of the Department, the Commissioner has fully authorized me to make such arrangements for the future, as will maintain the proper efficiency and responsibility of the superintendence, and ensure the accuracy of the measurements and estimates.

For this purpose, it is deemed advisable that Mr. John Morris, the Chief Clerk of works, who has heretofore had general charge both of the Parliament and Departmental buildings, under the respective Architects of each, should, in future, confine his attention entirely to the former, and act altogether under your orders, without exercising any authority over the other Clerks of works.

It will therefore be his duty, the same as of Mr. John Grist and Mr. Larose, the other Clerks of works, to see that your orders are strictly

carried into effect ; to set out the works from your plans ; to see that none but the best class of materials are used in the building, and that the workmanship throughout is well executed ; to make measurements of all work performed ; to keep the time of the men employed upon the works, both contract and extra-work, and such other memoranda in relation thereto as you may deem necessary or expedient.

To admit of these officers giving a closer attention to the execution of the works, it is necessary that they should, to a certain extent, be relieved from making out the details and results of measurements.

With this object, a competent measurer, Mr. John Bowes, has been appointed, whose duty it will be, under your instructions, to attend specially and exclusively to the measurement of all classes of work connected with the Parliament buildings, aided by the Clerks of works ; both being held responsible for their accuracy. He will make you monthly returns for the progress estimates, and keep accurate measurements and notes for the final.

You will please instruct Mr. Grist to assist him in his calculations and in preparing these returns, as well as in making out fair copies of the estimates for transmission to the Department, and in entering them in the books provided for this purpose.

I have to add that it is considered indispensably necessary that the time of the foremen, mechanics, and laborers employed daily on the contract works, and more especially upon any extra-works that may be in progress, should be regularly and accurately kept in future, and you are requested to make arrangements at once with the Clerks of works for that purpose.

I have the honor to be,

Gentlemen,

Your obedient servant.

(Signed) SAMUEL KEEFER,  
Deputy Comr. Public Works.

Messrs. Fuller & Jones,

Architects,

Parliament buildings, Ottawa.

P. S.—A copy of the letter of instructions addressed to Mr. John Morris is enclosed herewith for your information.

(Signed) S. KEEFER.

**No. 109.**

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**Deputy to  
John Morris.****OTTAWA, 28th May, 1861.****SIR,**

Referring to the letter addressed to you on the 16th instant by the Secretary of the Department, in which, for the reasons therein stated, you were informed that you are no longer to have any authority in connection with the expenditure of money or the certifying of accounts, and that your duties henceforward will be confined to the practical supervision of such parts of the works as the Deputy Commissioner may point out : I have now to acquaint you that it is considered necessary you should, in future, confine your attention exclusively to the Parliament buildings, and act under the orders of the Architects of those buildings, without exercising any authority over the other Clerks of works.

It will therefore be your duty, the same as of Mr. Grist and Mr. Larose, the other Clerks of works of these buildings, to see that the orders of the Architects are strictly carried into effect ; to set out the works from the plans ; to see that none but the best class of materials are used in the buildings, and that the workmanship throughout is well executed ; to make measurements of all work performed ; to keep the time of the men employed upon the works, both contract and extra, and such other memoranda in relation thereto as the Architects may deem necessary or expedient.

To admit of your giving closer attention to the execution of the works, you will be relieved to a certain extent from making out details and results of measurements, which duty will hereafter devolve on the measurer, Mr. Bowes, who has been appointed for that special purpose ; but you are nevertheless required to afford him such assistance and explanations as may be necessary to a perfect elucidation of all previous measurements and returns.

Having observed some notices in the public papers of this City in reference to visitors and the preservation of the grounds under your charge, and considering that such notices are no longer necessary, I have to request that you will discontinue them ; that you will procure

and certify the bills for the same, and so put an end to any further expenditure on this account.

I have the honor to be,

Sir, &c., &c.,

(Signed) SAMUEL KEEFER,

Deputy Comr. Public Works.

Mr. John Morris,

Clerk of Works,

Parliament buildings, Ottawa.

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No. 110.

Deputy to John Grist.

OTTAWA, 29th May, 1861.

SIR,

Certain changes having been made in the position and duties of the Clerks of works upon the Public buildings at this place, I have to acquaint you that you are in future to take your orders directly and entirely from the Architects of the Parliament buildings, and to perform all such duties as they may think proper to assign to you in reference to those buildings, and to those only.

It will be your duty to see that the orders of the Architects are strictly carried into effect, upon any portion of the buildings they may indicate, and to set out the works from the plans where ever required by them ; to see that none but the best class of materials are used, and that the workmanship throughout is well executed ; to make measurements of all work performed ; to keep the time of the men employed upon the works, both contract and extra, and such other memoranda in relation thereto as the Architects may deem necessary or expedient.

A measurer, Mr. John Bowes, having been appointed to make all future measurements of the work performed on the Parliament buildings, and to furnish the Architects with the details and results thereof for making up the progress and final estimates, a portion of which duty has heretofore been discharged by you, you are accordingly required to furnish him with all necessary explanations in relation to former returns,

and to assist him in making out the future ones, in entering them into the books provided for this purpose, and in making copies thereof for transmission to the Department, in such manner and at such times as the Architects may direct.

I have the honor to be,

Sir,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Comr. Public Works.

Mr. John Grist,  
Clerk of Works,  
Parliament buildings, Ottawa.

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**No. 111.**

OTTAWA, 29th May, 1861.

Deputy to  
Fuller & Jones.

GENTLEMEN,

I have the honor to enclose herewith, for your information, a copy of the instructions this day furnished to Mr. John Grist, one of the Clerks of works on the Parliament buildings; from which you will observe that he is in future to act directly and entirely under your orders, and to perform all such duties in connection with those buildings as you may assign him.

I have the honor to be,

Gentlemen,

Your obedient servant,

SAMUEL KEEFER,  
Deputy Comr. Public Works.

Messrs. Fuller & Jones,  
Architects,  
Parliament buildings, Ottawa.

**No. 112.**Deputy to  
John Bowes.

OTTAWA, 31st May, 1861.

SIR,

Having received the authority of the Commissioner to appoint you as measurer on the Public buildings now in course of erection here, I have the honor to furnish you with the following instructions for your guidance.

It will be your duty, under the instructions you may from time to time receive from the Architects, to make measurements and keep notes of all classes of work completed and in progress upon the Parliament buildings and other works connected therewith ; to furnish the Architects with fair copies of the same, retaining the originals in your own possession ; to make up the quantities of the several kinds of work done during each month, and return them to the Architects ; to assist them in making up the estimates, and in entering them in the books provided for that purpose. As you will be held responsible for the correctness of these quantities, your signature must accompany all estimates transmitted to the Department for payment.

The Architects, through their Clerks of works, will point out to you the work done during this present month ; and after you have measured and returned it to them, you will commence a thorough examination of all previous measurements, with special reference to the final estimate : beginning at the foundation and satisfying yourself of the correctness of those measurements, by sinking pits at various points along the walls, and thereby verifying the dimensions given. You will get the Contractor to note these observations ; and should he require more pits to be sunk to prove the depth of the walls, you will give proper attention to all his reasonable demands in that respect, as far as may be necessary to ascertain with accuracy the amount of work performed. From such observations you will check the returns for extra-works in foundations, and communicate the result to the Architects.

As it will be impossible now to institute a similar check upon the quantity of excavation and masonry, additional to the contract, in the main drain from the boiler-house, and in the cold-air ducts, you will carefully examine and verify, as far as you can, the notes, plans, and calculations of the same, in the possession of the Architects.



You will also, when called upon, give them the benefit of your opinion in regard to the fair value of such additional works as are not included in the contract ; taking into consideration the circumstances under which they have been or may be executed. You will be careful to gather correct returns from the Clerks of works of the daily force of laborers, mechanics, and foremen employed upon the buildings, and more especially upon any extra-work that may be in progress, whether paid for by measurement or by day-work ; separate returns of day's labor, both in contract and extra-work, must be made to the Architects at the end of each month.

Mr. John Grist, one of the Clerks of works, who has heretofore performed most of these duties for the Architects, has been instructed to afford you all necessary information and explanations in reference to the previous returns, and to assist you with the future ones ; to enter them in the books provided for that purpose, and in making copies thereof for transmission to the Department.

Subject to the approval of the Commissioner, your appointment will date from Monday, the 20th instant, the day on which you were notified to meet me here ; and your pay will be eighty three and one third dollars, (\$83 $\frac{1}{3}$ ) per month.

I have the honor to be,

Sir,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Comr. Public Works.

Mr. John Bowes,  
Measurer of works,  
Parliament buildings, Ottawa.

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No. 113.

Deputy to  
Fuller & Jones.

GENTLEMEN,

Referring to the letter addressed you on the 28th instant, informing you that Mr. John Bowes had been appointed to aid you as measurer of

OTTAWA, 31st May, 1861.

works, and to attend specially and exclusively, under your orders, to the measurement of all classes of works on the Parliament buildings ; I have now the honor to inclose for your information a copy of the instructions which he has this day received from me for his guidance.

It appears advisable that he should enter upon his duties to-morrow morning, and then commence making the progress estimate for the current month ; you will please instruct him as you may deem expedient.

I have the honor to be,

Gentlemen,

Your obedient servant,

SAMUEL KEEFER,

Deputy Commissioner of Public Works.

Messrs. Fuller & Jones,

Architects,

Parliament Buildings, Ottawa.

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**No. 114.**

OTTAWA, 1st June, 1861.

Deputy to  
Beant & Laver.

GENTLEMEN,

The attention of the Department has been drawn by the Chief Engineer, in his recent report on the works under your charge, to the question of superintendence ; setting forth the necessity that exists for certain changes in the duties of the Clerks of works, and for the appointment of a person to attend specially and exclusively to the measurements and to assist you in making out the estimates.

This report having received the consideration of the Commissioner, he has fully authorized me to make such arrangements for the future as will maintain the proper efficiency and responsibility of the superintendence, and ensure the perfect accuracy of the measurements and estimates.

To this end it is deemed advisable that Mr. John Morris, the Chief Clerk of works, who has heretofore had general charge over all the buildings, both Parliamentary and Departmental, under the respective Architects of each, should in future confine his attention exclusively to the former, without exercising any authority over the other Clerks of works.

To admit of these officers giving a closer attention to the execution of the works, it is also considered necessary that they should, to a certain extent, be relieved from making out the details and results of measurements. With this object, Mr. John Pattison has been appointed, whose duty it will be, under your instructions, to attend specially and exclusively to the measurement of all classes of work connected with the Departmental Buildings, aided by the Clerks of works; both being held responsible for their accuracy. He will make you the monthly returns for progress estimates, and keep accurate measurements and notes for the final.

You will please instruct the Clerks of works to afford him all necessary information and explanations in reference to previous measurements, and to assist him in making the future ones.

It will be the duty of the Clerks of works, as heretofore, to see that your orders are strictly carried out; to set out the works from your plans; to see that none but the best class of materials are used in the buildings, and that the workmanship throughout is well executed; to make measurements of all work performed; to keep the time of the men employed upon the works, both contract and extra, and such other memoranda in relation thereto as you may deem necessary or expedient.

I have to add that it is considered indispensably necessary that the time of the foremen, mechanics, and laborers daily employed upon the contract works, and more especially upon any extra-works that may be in progress under your written orders, should be regularly and accurately kept in future, and a return thereof made monthly to the Department.

You are requested to make arrangements at once with the Clerk of works for this purpose.

A copy of the letter of instructions addressed to Mr. John Henry Pattison is enclosed herewith for your information.

I have the honor to be,

Gentlemen,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Commissioner of Public Works.

Messrs. Stent & Laver,  
Architects,  
Departmental buildings, Ottawa.

No. 115.

OTTAWA, 1st. June, 1861.

Deputy to  
J. H. Pattison.

SIR,

Having been authorized by the Commissioner to make such arrangements, in reference to the Public buildings in course of erection at this place, as are necessary for the protection of the public interest, and having also received power to carry them provisionally into effect, I have to request that you will take upon yourself the duties of measurer of works upon the Departmental buildings, under the following instructions, and such further directions as you may hereafter receive from the Architects of these buildings.

The pay attached to this office will be at the rate of eighty three and one third dollars (\$83 $\frac{1}{3}$ ) a month, and will commence on this day; all these arrangements, however, are subject to the approval of the Commissioner. It will be your duty, under the instructions you may from time to time receive from the Architects, to make measurements and keep notes of all classes of work completed and in progress upon the Departmental buildings and works connected therewith; to furnish the Architects with fair copies of the same, retaining the originals in your own possession; to make up the several kinds of work done during each month, and return them to the Architects; to assist them in making up the estimates, and entering them in the books provided for that purpose.

As you will be held responsible for the correctness of these quantities, your signature must accompany all estimates transmitted to the Department for payment.

The Architects, through their Clerks of works, will point out to you the work done during the past month: and after you have measured and returned it to them, you will commence a thorough examination of all previous measurements, with special reference to the final estimate, beginning at the foundations, and satisfying yourself of the correctness of those measurements by sinking pits, if necessary, at different places along the walls, as far as may be required, to ascertain with accuracy the amount of work performed.

From such observations you will check the returns for extra-work in foundations, and communicate the result to the Architects. As it will

be impossible to institute a similar check upon the quantity of excavation and masonry, additional to the contract, in the main drains from the boiler-houses and in the cold-air-ducts, you will carefully examine and verify, as far as you can, the notes, plans, sections, and calculations of the same, in possession of the Architects.

You will also, when called upon, give them the benefit of your opinion in regard to the fair value of such additional works as are not included in the contract, taking into consideration the circumstances under which they have been or may be performed. You will be careful to gather correct returns from the Clerks of the works of the daily force of laborers, teams, mechanics, and foremen employed on or about the buildings, and more especially upon any extra-work that may be in progress under the written orders of the Architects, whether paid for by measurement or by day's work. Separate returns of day's labor, both in contract and extra-work, must be made to the Architects at the end of every month. The Clerks of works will be instructed by the Architects to afford you all necessary information and explanations in reference to previous measurements, and to assist you in making the future ones.

I have the honor to be,

Sir,

Your obedient servant,

(Signed) SAMUEL KEEFER,  
Deputy Comr. Public Works.

Mr. John Henry Pattison,  
Measurer of works,  
Departmental buildings, Ottawa.

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**No. 116.**

QUEBEC, 27th September, 1861.

Sec'y. of P. W. to  
Jones, Haycock & Co.

GENTLEMEN,

I have the honor to inform you that the Honorable the Commissioner has decided that the works at the Departmental buildings, Ottawa, are to be suspended at the end of the present month, and has directed me to notify you to that effect.

The Honorable Mr. Killaly will report to the Department what will be required to protect the works already done against the effects of frost during the ensuing winter.

T. TRUDEAU, Secretary.

Messrs Jones, Haycock & Co.,  
Contractors, Ottawa.

**No. 117.**

QUEBEC, 27th September, 1861.

Sec'y. of P. W. to  
Thos. McGreevy:

GENTLEMEN,

I have the honor to inform you that the Honorable the Commissioner has decided that the works at the Parliament buildings, Ottawa, are to be suspended at the end of the present month, and has directed me to notify you to that effect.

The Honorable Mr. Killaly will report to the Department what will be required to protect the works already done against the effects of frost during the ensuing winter.

T. TRUDEAU, Secretary.

Thos. McGreevy, Esq.,  
Contractor, Ottawa.

**No. 118.**

QUEBEC, September 28th, 1861.

Sec'y. of P. W.  
to C. Garth.

SIR,

I have the honor to inform you that the Honorable the Commissioner has decided that the works connected with the heating and ventilation of the Public buildings at Ottawa, are to be suspended at the end of the present month, and has directed me to notify you to that effect.

The Hon. Mr. Killaly will report to the Department what will be required to protect the works already done against the effects of frost during the ensuing winter.

T. TRUDEAU, Secretary.

Chs. Garth, Esq.,  
Contractor, Montreal.

No. 119.

Secy. of P. W. to  
H. H. Killaly.  
28, 261.

DEPARTMENT OF PUBLIC WORKS.

Quebec, 21st. September, 1861.

SIR,

I am directed by the Honorable the Commissioner to request that you will make it convenient to proceed to Ottawa with the least possible delay.

The sum appropriated by the Legislature towards the erection of the Parliamentary and Departmental buildings and of a residence for His Excellency the Governor General, is now exhausted ; and the Honorable the Commissioner is most anxious that arrangements should be made with the view of closing the works for the winter as soon as possible, consistent with their being put into a state of security against frost, &c.

The Commissioner, on his coming into his present office, found the plans of those buildings had been decided upon, the contracts entered into, and considerable progress made with the works and in the preparation of materials of all kinds. In view of the magnitude of these works and the great outlay which they involve, he at once devoted a large portion of his time to acquire such a knowledge of the details connected with the previous payments, the state of the works, &c., &c., as would enable him to form some idea how they stood with regard to completion, &c. ; but before it was possible for him to acquire this information, the appropriation was all but exhausted. The Commissioner very soon discovered that an extraordinary large proportion of the amount already paid has been for additional work, extraneous of that shewn and described in the plans and specifications and embraced in the original contracts ; that of such additional work no previous estimates or measurements had been made nor quantities ascertained. These quantities seemed to vary every day, and no prices or mode of measurement had been agreed on. Great discontent exists on the part of the Contractors in consequence, who complain that a large sum to which they are entitled is held back from them, to their great injury and embarrassment in the carrying on of their work ; and they represent that the returns of the Architects did not, and do not truly shew the state of the work ; the contract and additional work being so mixed up together that it is not possible, from these returns, to make out in the office the true state of the accounts—a fact as unfair and embarrassing to the Commissioner, as it is unjust to the Contractors. In their opinion, this has been done with the view of hiding the great outlay on work not embraced in the plans and

specifications, which should have been foreseen and provided for by the Architects.

Under the circumstances, the Commissioner is of opinion that it is absolutely necessary to refer the matter generally to some qualified and impartial person ; and as he understands you have practised as an Architect as well as a Civil Engineer, and have not been connected with the works in question, he is very desirous that you should undertake the investigation of the whole case, keeping the following points in view :

*Firstly.*—What arrangement can be at once made to suspend the works, in order to reduce to the utmost the amount to be expended on the responsibility of the Government, until the whole subject can be submitted to the Legislature.—This is a matter of the greatest importance.

*Secondly.*—To ascertain the amount that will be required to pay for work and material already done and provided, in order to enable the Contractors to pay off and discharge their mechanics and laborers. Also, what expenditure will be strictly required to protect the works in their present unfinished state, against the effects of the coming winter.

*Thirdly.*—To make such investigation and have such measurements made as will enable you to distinguish clearly the additional work from that embraced in the contract, to establish the reasonable prices at which the former should be paid.

*Fourthly.*—To ascertain and report for the information of the Commissioner, what portions of the works might, in your judgment, be allowed to lie over, and also at what time it is probable the completion of the buildings respectively (so far as to permit their occupancy) may safely be calculated upon, and whether it might be advisable to extend that period, without interfering with the arrangements contemplated.

After duly and carefully examining into all these important details, you will be pleased to prepare and transmit a report thereon to the Commissioner, who will then be prepared, without loss of time, to have a final decision arrived at on the subject.

T. TRUDEAU,  
Secretary.

Honorable H. H. Killaly,  
Clarendon Hotel, Quebec.

## REPORT BY H. H. KILLALY.

No. 120.

QUEBEC, 12th November, 1861.

H. H. Killaly  
to Commissioner.  
56192.

SIR,

Immediately upon receiving the Departmental letter of the 21st September last, upon the subject of the Ottawa buildings, addressed to me by your directions, I proceeded to that city, and entered upon the important investigation I was instructed to make, and upon which I have been almost uninterruptedly engaged from that date to the present.

I have now the honor to report for your information the result of my labors so far ; and, in doing it, I will take up the several subjects in the order in which they are placed in your letter of instructions.

*Firstly.*—« What arrangements can be at once made to suspend the « works, in order to reduce to the utmost the amount to be expended « upon the responsibility of the Government, until the whole subject « can be submitted to the Legislature. This is a matter of the greatest « importance.»

On arriving at Ottawa, I proceeded to make a general inspection, and, having done so, I addressed a communication to the Department respecting the stoppage of a certain portion of the works ; but, by the return of post, the Contractors received a letter from the office, directing them to discontinue them in toto.

The effect of this step was instantly to throw out of employment between sixteen and seventeen hundred mechanics and laborers ; representing a population, I should say, of between five and six thousand. That no riot or disturbance took place in consequence, testifies favorably to their good conduct and management of the works.

Under the *first* head I am required to suggest « what arrangements can be at once made to suspend the work » this being, in my opinion a very serious point, to which I have, accordingly, given much consideration.

There is no power given in the contract to the Commissioner or Architects, to suspend the works. On the contrary, I have ascertained that to a condition to such effect, introduced by the Architects in the draft of the specification proposed to be attached to the contract, the Contractors unanimously refused to assent ; and it was, in consequence,

struck out. There can be no doubt of the total stoppage of works being productive of very serious disadvantages to Contractors. It is usual and proper that works of masonry and brick-work should be suspended during the most inclement part of the winter ; but, on the other hand, that is the very time in which the materials, such as cut-stone, carpentry &c., can be prepared at much less cost to the Contractors ; the wages of mechanics and laborers being, at that period, fully twenty-five per cent lower than in summer. The hauling and delivery of heavy materials, which is a serious item, is also much more practicable and less expensive during the winter ; and in this particular case a further loss accrues to the Contractors in the dispersion of a great number of mechanics of the superior class, required in the erection of buildings of such a character as those under consideration. Very many of these men had been collected at much expense from Great Britain, Germany, the States, and other countries, to which they have now returned.

The Department being, in my judgment, thus liable to the Contractors for the amount of such losses as they could establish, (the extent of which would, no doubt, be considerable) I came to the conclusion, after much reflection, that, under all the circumstances, the best arrangement that could be made with them for the interest of the Public was to make up the accounts as fully as possible to the 1st October last, to decide upon all unsettled measurements and other matters, and fix on equitable rates upon which the Contractors should be paid for all work not originally contemplated nor included in their contract.

These rates to be applicable to all such works, already performed or remaining to be done to complete the entire premises ; and that the amount of drawback now on hand, as well as that upon the estimates to the first October, should be paid to the Contractors. It being understood that, this course being adopted, the Contractors waive all claims whatever arising from the suspension of the works.

*Secondly.*—« To ascertain the amount that will be required to pay for « work done and materials provided, in order to enable the Contractors to « pay off and discharge their mechanics and laborers ; also, what expenditure will be strictly required to protect the works in their present « unfinished state against the effects of the coming winter. »

With respect to the amount required to pay for work and materials already done and provided, the detailed general estimates, which I herewith transmit in duplicate, show that the total value of work and materials

done and provided for the Parliament building from the commencement up to the 1st day of October 1861, is \$651,491.55. Upon this there has been paid the sum of \$438,163.95. If to this payment be added the drawback to be retained by the Department under the terms of the contract, amounting to \$65,149.15, the sum of \$148,178.45 would only be payable to the Contractor, up to the 1st October last. But, under the terms of this agreement for waiving their claims for compensation for losses from stoppage of the works, they would be entitled to receive this percentage; and, in this view, the sum of \$213,327.60 would be payable to them.

The estimates for the Departmental buildings are not fully brought up to the 1st of October. The necessary measurements therefor not being yet completed, calculating from those which are perfected, as far as they go, the value of work and materials done and provided amounts to \$662,466.00. Upon this \$464,391.54 are paid, adding to which the amount of drawback \$66,246.60, the sum of \$131,827.86 would be the amount payable to the Contractors (exclusive of the amount for work yet to be returned, which may probably be about \$50,000.00); but, as in the case of the Parliament buildings, should the drawback be payable to them according to the agreement, the full sum they would be entitled to receive would be \$198,074.46, exclusive of work not returned.

In reference to the expenditure strictly required to protect the works in their present unfinished state against the effects of the coming winter, I had the honor of addressing you a letter upon the 31st October last, wherein I defined minutely the mode in which I recommended the walls, &c. of the several buildings should be protected and covered. I am glad now to be able to state, that it has been satisfactorily carried into effect, and for an amount less than I mentioned.

The cost of covering the Parliament buildings may approximately be assumed at \$7,596.59; but of this sum fully \$4,346.00 is upon work which forms a permanent part of the building, such as levelling the walls, &c., &c.

The sum expended in protecting the Departmental buildings is about \$15,150, from which may also be deducted \$10,150; that portion of it being incurred upon permanent work, such as roofing, felting, levelling walls &c.

From the preceding it will be seen that the total sum expended on all the buildings, *non remuneratively*, except as regards their preser-

vation from frost, rain, &c., amounts to but \$8,250, which outlay should, in my judgment, be borne by the Contractors, in the event of the works being completed by them.

*Thirdly.*—« To make such investigation, and have such measurements « made, as will enable you to distinguish clearly the additional work « from that included in the contract, and to establish the reasonable « prices at which the former should be paid. »

All these investigations and measurements have been most elaborately and carefully made ; the result is shown clearly in the estimates for the work done and materials provided for the Departmental and Parliament buildings, to which I have already referred as being herewith sent in duplicate.

In those estimates, the value of work done and materials provided to the 1st. October last, is given under three heads.

Under the *first*, all works performed under contract, and the amount of each item is strictly calculated from the schedule of rates attached to the contract.

Under the *second* head are comprehended the items of extra-works.

Under the *third* head are to be found all works admitted as additional or those altogether extraneous of contract. In it are :

Works of masonry, brick-work, rock excavation, &c., &c., involved in the carrying out of the system of heating and ventilation adopted.

The additional fire-proofing.

The expense of foundations found necessary in addition to those contemplated, and which were embraced in the contract.

Nepean stone-facing.

For all of those, authority was conveyed by the Department to the Architects.

Of the various items of « additional works », the outlay consequent upon the adoption of the system of heating and ventilation is the most important. In my judgment, the Legislative Council and House of Assembly rooms, the Library, and the large public corridors and halls of the Parliament buildings, are the only parts of the structures that might not have been heated and ventilated in an ordinary and inexpensive manner ; and I am by no means sanguine as to the efficient and satisfactory working of the system, especially without fans.

The Architects were instructed to carry out the directions of Mr. Garth in the construction of the air-ducts &c., &c., which they did for some time ; but finding that the class of masonry required by him was,

in their judgment, unnecessarily expensive, a change was made in it, and a saving thereby effected. The amounts expended on additional works for which I cannot find special authority, are ; in the *Parliament buildings*.

Extra-sized bond stones of the main tower. . . . .	\$180.00	
Picked-face bond stones in the piers of the ventilating towers . . . . .	107.83	
Potsdam stone relieving arches . . . . .	4489.00	
Oak sills to window-frames . . . . .	1449.76	
Sundries in day accounts . . . . .	800.00	
	<hr/>	7026.59

## DEPARTMENTAL BUILDINGS.

Additional work in basement doors . . . . .	960.00	
Potsdam stone in relieving arches. . . . .	1108.00	
Rubbed face of Ohio stone . . . . .	1350.00	
Iron stauncheons and saddle bars to windows . . . . .	975.00	
	<hr/>	\$4393.00

Total. . . . . \$11,419.59

Strictly speaking, the Architects were not authorized in incurring this expenditure without authority, but I must say in justice to them; that the amount is unusually small upon buildings of the extent of those under their charge ; and that the several items, with the exception probably of « the rubbed Ohio stone », improve the appearance and permanence of the building.

That the works embraced in the second and third columns of the estimates were not to be valued at the rates of the schedule, was determined at an early period, as also that it was intended only to apply to the preparation of progress estimates. Upon its being first prepared and submitted to the Contractors, they one and all objected to it, and refused for some time to sign the contracts. Nor did they sign them until it was so understood and admitted.

In December, 1860, Mr. Page thus writes respecting it : « It is no « doubt true that the rates are by no means proportional to the value of « the work ».

In the same month, in a letter from the Architects to Mr. Page, they state, « that in an interview with the Commissioner they were requested « to put a fair valuation on all work done in addition to the contract « work, and were informed at the same time that the heading of « the schedule was incorrect as to extra-works » ; meaning thereby



that it was to be confined to the rating only of progress estimates, but was not to be applied to the rates of extra or additional work. This principle is further supported by a letter (January, 9th. 1861), from the Secretary of the Department to Mr. Page, expressing the dissatisfaction of the Commissioner at the Architects having referred to merely verbal authority from him, and stating, « that the Commissioner considers as a « general rule of equity and justice, that work not embraced in a contract « should be paid for at its fair value, whether such value exceed or « fall short of the contract rate ».

Again, in a memorandum drawn up by Mr. Keefer for the Commissioner, that gentleman states: « That in all the communications with the « Contractors, prior to the signing of the contracts, respecting the ar- « rangements of the terms and conditions to be embodied in them, it was « always understood and conceded that the schedule of prices, which « had been prepared by the Architects for the purpose of being attached « to the contract, and forming the basis whereon the monthly progress « estimates for contract work were to be made, should not apply to or « govern any extra-work, not included in the contract; that this schedule « of prices being afterwards attached to and made part of the contract, « without first striking out of the heading of it the words ‘ and also for « extras ’, was entirely an oversight and a mistake, in respect to which it « would be manifestly unjust for the Department to take advantage; to do « so when it is admitted that the prices are unremunerative, would not « only be at variance with what is right and just, but would be contrary « to the meaning and intention of the last clause of the contract, which « covenants: « That if any addition shall entail extra expense on the « Contractors, the same shall be allowed them. »

The Deputy Commissioner further expresses himself, « that any extra or « additional work should in my opinion be paid for at its fair value, upon « the estimate of the Architects, approved of by the Chief Engineer of « the Department. »

In several other Departmental documents on this subject, I find the Deputy Commissioner and the Chief Engineer consider that all the rock excavation and other works connected with the heating, ventilation, sewerage, &c., are « extraneous of contract »; and indeed, it is not possible to come to any other conclusion.

From time to time, items of this nature were entered in the progress estimates at prices sanctioned by the Engineer and much beyond those of the schedule; fully proving that it was not intended to apply the

schedule rates to extra or additional works. To the prices so inserted, however, the Contractors would not assent; and the Engineer admitted he intended them only to found progress estimates upon, but not to be final; as, from a large portion of the works being covered with snow, he could not form a decided opinion as to what the prices should really be.

The making out of a schedule of prices by which the Contractors should in equity and justice (to use the words of the late Commissioner) be paid, became, therefore, an important part of the duty devolving on me, and for which I was called on by your letter of instructions.

In fixing on the rates enumerated in the returns herewith sent, I have exercised my judgment dispassionately, and I have been guided by the strongest desire to do what I considered strict justice between the Contractors and the Public. Every item was gone over in the most careful and enquiring manner, evidence was taken as to the actual cost of procuring, transporting, dressing, redressing, waste, and laying of materials; and I am satisfied the rates finally adopted are justifiable and reasonable, although in many instances much below those demanded by the Contractors.

The principles of measurement also are fair, and such as, in my experience, I have found most generally applied to such cases.

The following abstract shows very nearly the value of work done and materials provided up to 1st October, 1861, calculated at the rates agreed on. Also the payments made on account and the sums payable to the Contractors, assuming that no drawback is withheld, in consideration of their waiving all claims for losses consequent upon the suspension of the works.

PARLIAMENT BUILDINGS.

Value of work and materials.	Payments.	Due.
\$651,491.55	\$438,163.95	\$213,327.60

DEPARTMENTAL BUILDINGS.

	662,466.00	\$464,391.54	\$198,074.46
Add value of work in course of mea- surement.	\$50,000.00	. . . . .	\$50,000.00
	<hr/> \$1,363,957.55	<hr/> \$902,555.49	<hr/> \$461,402.06

exclusive of Mr. Garth's contract for heating and ventilation apparatus, amounting to \$61,285, on which is paid \$35,170.28. To the foregoing is also to be added the sums paid and due the Architects, Clerks of works, &c., &c.

*Fourthly.*—« To ascertain and report for the information of the Honorable the Commissioner, what portions of the works might in your judgment be allowed to lie over, and also at what time it is probable the completion of the buildings respectively, so far as to permit their occupancy, may safely be calculated upon; and whether it might be advisable to extend that period without interfering with the arrangements contemplated. »

To enable me to reply satisfactorily to the several points embraced under this head, a reliable and comprehensive estimate of the sum required to *complete* the whole of the buildings, together with the approaches, formation, and enclosing of the grounds &c., &c., is indispensable. The making out of such a document I have now on hands; and it is based on the principle that such completion should be calculated for in a style corresponding with the character of the buildings. The works involved in their completion are so interwoven, that it is difficult to conceive how they could, with due regard to ultimate economy, and their occupancy by the Departments, be separated, so as to let portions lie over. No doubt a great part of the sum which must be expended in the grading, forming, and enclosing of the grounds, together with the necessary entrances, gates, approaches &c., &c., can be deferred, without inconvenience in the occupancy of the buildings, to such a period as the finances may render prudent.

As to the « time it is probable the completion of the buildings respectively may be safely calculated upon », the stoppage of the works must, to some degree, retard it. Notwithstanding which, however, if proper exertions are used, I see no reason to apprehend much delay in carrying out « the arrangements contemplated », assuming them to be the removal of the Public Departments &c. to Ottawa, on the expiration of their term here; provided the necessary means are furnished by the Legislature at an early date.

It is very desirable that the division of the buildings and the appropriation of the rooms for the respective Departments and their Officers, should be decided upon before further progress is made with the works, as the style of finishing them, the preparation for bells, water-pipes &c., &c., should be regulated by it,

I have the honor to be,

Sir,

Your obedient servant,

HAMILTON H. KILLALY.

Progress estimate of work done and materials delivered for the Parliament buildings at Ottawa, by Mr. Thos. McGreevy, Contractor, to the first of October, 1861; based upon the rates of prices and principles of measurement for past and future works, arrived at and approved of by the Honorable H. H. Killaly and Mr. Thos. McGreevy.

No. of item.	DESCRIPTION OF WORK DONE, OR OF MATERIALS DELIVERED.	ON CONTRACT.		
		Quantity.	Schedule price.	Value.
1	Earth excavation .....	2333	.20	466.60
2	Filling to walls and terraces .....	7200	.10	720.00
3	Facing to walls as per specification .....	9554	.52	4968.08
4	Picked dressed limestone piers &c .....	6300	.17	1071.00
5	Rubble-masonry in walls labor and materials.....	5563	3.50	19470.50
6	Bricks laid in walls, labor and materials.....	3656750	6.47	23659.17
7	Arches, brick.....	2500	.10	250.00
8	Plain face Ohio stone-labor.....	49560	.22	10903.20
9	“ “ “ circular.....	2936	.30	880.80
10	Molded-work.....	18443	.31	5717.33
11	“ “ “ circular.....	14496	.48	6958.08
12	Sunk-face “ “ .....	8808	.35	3082.80
13	“ “ “ circular.....	3688	.50	1844.00
14	Chamfers.....	203	.24	48.72
15	Molded-stops .....	500	.20	100.00
16	Mitres.....	3200	.20	640.00
17	Carving Ohio stone, strings, caps and bosses .....	1684	.76	1279.84
18	Plain-face Brockville stone-labor .....	2762	.23	635.26
19	“ “ “ circular .....	166	.35	58.10
20	Sunk-face “ “ .....	1119	.56	626.64

DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.		ON CONTRACT.		
No. of item.		Quantity.	Schedule price.	Value.
21	Sunk-face, Brockville stone.....	267	.84	224.28
22	Molded-work, Brockville stone.....	40	.53	21.20
23	" " " circular.....	10	.42	4.20
24	Chamfers, " " " ".....	24	.90	21.60
25	Molded-stops, " " " ".....	18	.36	6.48
26	Relieving arches as per specification.....	5772	.07	404.04
27	Laying 9" drain pipe including cement.....	84	.15	12.60
28	Laying 6" drain pipe including cement.....	51	.13	6.63
29	Wrought-iron in chimney bars and chain bond.....	2617	12.60	329.74
30	Hoop-iron in bond.....	750	5.00	37.50
31	Wrought-iron in stanchion bars.....	366	.17½	64.05
32	Pitch, tar, and sand laid on walls.....	1055	.25	263.75
33	Lathed centering.....	720	1.05	756.00
34	Ribbed centering.....	261	.16	41.76
35	Yellow pine, in lintels, labor and material.....	2000	9.80	19.60
36	Yellow pine, in scantling in roofs rough.....	40000	10.50	420.00
37	Dormers, frames and sashes, complete.....	88	20.00	1760.00
38	Dormers, frames and sashes small, size.....	42	12.00	504.00
39	Frames and sashes, basement windows ¾ finished.....	70	6.00	420.00
40	" " " " " windows of Courts, ground and first floors ¾ finished.....	40	7.50	300.00
41	" " " " " ground floor, wardrobes and reading rooms ¾ finished.....	26	20.00	520.00
42	" " " " " ground floor, Committee rooms each.	72	28.00	2016.00

43 Frames and sashes, first floor, Committee rooms..... each.	65	14.00	910.00
44 2" pine panelled doors, saloons, § finished..... each.	12	10.00	120.00
45 1½" beaded window linings, prepared..... feet super.	1037	.20	207.40
46 2" four panelled doors, basement, § finished..... each.	28	5.50	154.00
47 Molded architraves windows..... feet super.	3411	.10	341.10
48 1½" returned beads..... feet lineal.	280	.03	8.40
49 Laying iron joists, labor..... per square.	800	1.00	800.00
<b>MATERIALS DELIVERED.</b>			
50 Drift-sand..... yard cube.	500	.52	260.00
51 Rubble-stone..... toise 54 ft.	237	.87	206.19
52 Native sandstone, in block..... feet cube.	10227	.50	5113.50
53 Ohio stone..... feet cube.	81500	.45	36675.00
54 Fire-bricks..... mille.	20000	35.00	700.00
55 Fire-bricks arches..... mille.	2700	40.00	108.00
56 Bricks ordinary..... mille.	1000000	3.80	3800.00
57 Drain-pipes 12"..... yard lineal.	116	1.05	121.80
58 " " 9"..... yard lineal.	499	.90	449.10
59 " " 6"..... yard lineal.	500	.60	300.00
60 " " 4"..... yard lineal.	207	.35	72.45
61 Elbows and junctions..... each.	93	.75	69.75
62 Rolled wrought-iron joists for fire-proof floors..... per ton.	Tons. Cwt.	90.00	27553.50
63 Pitch..... per barrel.	306 3	6.40	198.00
64 Yellow pine in scantling for roofing..... mille B. M.	20	9.80	112.30
65 1" " " boards clear..... mille B. M.	113500	11.90	1011.50
66 1½" " " "..... mille B. M.	85000	13.00	2041.00
67 1¾" " " "..... mille B. M.	157000	13.30	2261.00
68 2" " " "..... mille B. M.	170000	12.60	730.80
69 2½" " " "..... mille B. M.	58000	12.60	730.80
69 2¾" " " "..... mille B. M.	50000	12.60	630.00

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ON CONTRACT.		
		Quantity.	Schedule price.	Value.
70	3" Yellow pine boards clear.....	109000	11.90	1297.10.
71	" " common.....	25000	8.40	210.00.
72	1 1/4" " ".....	152000	8.40	1276.80
73	1 1/4" " ".....	265000	8.40	2226.00
74	2" " ".....	95000	7.70	731.50
75	Oak plank.....	25000	25.20	630.00
76	Arnprior marble.....	2000	1.05	2100.00
77	Slates.....	400	3.50	1400.00
				187289.74
Deduct—omissions from contract plans in making alterations in saloons and in the external walls of rooms north and west of Legislative Assembly and north and east of Legislative Council				
	Ohio stone in block.....	1114	.45	501.30.
	Plain-face on Ohio stone-labor.....	1268	.22	278.96
	" " " circular.....	299	.30	89.70
	Sunk-face " ".....	182	.35	63.70
	" " " ".....	13	.50	6.50
	Moulded-work.....	524	.31	162.44
	" " circular.....	55	.48	26.40
	Chamfers, .....	9	.24	2.16
	Mitres.....	94	.20	18.80

Carving to string course, Ohio stone.....		261/	.76	198.36	1803.28
Limestone flagging 2'.....		5687	.08	454.96	
					186486.46
No. of item.	EXTRA WORK.	EXTRA.			
		Quantity.	Actual price.	Value.	
78	Rolled-iron joists used for corbelling.....	7 c. fr. lbs.			
79	Riveted-iron plate girders.....	5 1 5	140.00	37.06	
80	Nepean facing on contract walls, extra over limestone.....	8 15 0 0	220.00	1925.00	
81	Nepean dressing on native sand stone quoins.....	85988	.50	42994.00	
82	Extra-sized Nepean bond stones main tower.....	11876	.15	1781.40	
		360	.50	180.00	46917.46
No. of item.	ADDITIONAL WORK.	ADDITIONAL.			
		Quantity.	Actual price.	Value.	
83	Earth excavations.....	10821	.55	5951.55	
84	Hard pan in clay mixed with bowlders.....	1894	2.00	3788.00	
85	Rock excavation to 5 feet deep.....	12289	2.00	24578.00	
86	" " 10 " ".....	7187	3.00	21561.00	
87	" " 15 " ".....	2173	4.25	9235.25	
88	" " 20 " ".....	274	6.00	1644.00	
89	Filling to walls and ducts.....	14402	.75	10801.50	



No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.		
		Quantity.	Actual price.	Value.
90	Rubble-masonry, increased thickness of walls, extra depth of foundations, sewer ducts and boiler-house.	23488	6.50	152672.00
91	Picked-face limestone in sewer and ducts.....	146899	.41	60328.59
92	" " circular for arches.....	12700	1.50	19050.00
93	Nepean facing below contract level.....	4145	.60	2487.00
94	Picked-face sandstone quoins.....	827	.25	206.75
95	Relieving arches over additional windows, basement... feet super.	133	.15	19.95
96	Bricks laid in walls labor and materials..... mille.	1561180	13.80	21544.28
97	Arches in brick labor.....	3550	.20	710.00
98	Chamfers in brickwork.....	100	.20	20.00
99	Plain-face Ohio stone-labor.....	8915	.40	35.66
100	" " circular.....	706	.50	353.00
101	" " rubbing circular.....	63	.09	5.67
102	Sunk-face " ".....	2092	.60	1255.20
103	" " circular.....	673	.64	430.72
104	Molded-work " ".....	959	.60	575.40
105	" " circular.....	527	.90	474.30
106	Chamfers " ".....	80	.60	48.00
107	Mitres " " in sunk work.....	28	.60	12.00
108	" " " " circular.....	64	.64	40.96
109	" " " " in molded work.....	60	.60	36.00
110	" " " " circular.....	43	.90	38.70
111	Plain-face, Arnprior marble.....	18	2.50	45.00
112	" " " " circular polished.....	375	3.50	1312.50
113	Picked-face Nepean steps & landings.....	1160	.60	696.00
114	Rolled wrought-iron joists used in steam chambers..... per ton.	C. Qr. lb. 4 1 9	140.00	30.31

115	Hot-air flues labor.....	feet lineal.	3912	.25	978.00
116	Plain-face, Brockville stone.....	feet super.	767	.60	460.20
117	" " " circular.....	feet super.	38	.75	28.50
118	Sunk-face " " " ".....	feet super.	316	.90	284.40
119	" " " " " ".....	feet super.	149	.96	143.04
120	Carving, Ohio stone, string courses, bosses, main tower.....	feet super.	90	1.08	97.20
121	Rough concrete.....	yard cube.	90	2.00	180.00
122	Wrought-iron in chimney bars and chain bond.....	per 100 lbs.	9105	10.00	910.50
123	Yellow pine in lintels, labor and materials.....	mille B. M.	3007	18.00	54.12
124	Nepean flagging to 3" in thickness.....	feet super.	7580	.25	1895.00
125	" " " " " ".....	feet super.	3139	.30	941.70
126	Ribbed centering labor and materials.....	feet lineal.	205	.15	30.75
127	Lathed centering " " " ".....	feet lineal.	13430	.20	2686.00
128	Frames and sashes, additional window basement $\frac{3}{4}$ finished.....	each.	28	9.35	261.80
129	Frames double sashes " " " ".....	each.	10	15.00	150.00
130	Oakills to window frames, extra over pine.....	feet super.	2132	.68	1449.76
131	2" deal panelled doors, basement $\frac{3}{4}$ finished.....	feet super.	584	.46 $\frac{1}{2}$	271.56
132	Molded architraves, additional windows, basement.....	feet super.	286	.15	42.90
133	Cut and molded friezes to heads of ground and first floor windows.....	feet super.	980	.40	392.00
134	1" wrought boxings for blinds in heads of windows.....	feet super.	1098	.12	131.76
135	Panelled and molded spandrels " " " ".....	feet super.	1189	.40	475.60
136	Picked-face bond stones in piers of ventilating towers.....	feet super.	263	.41	107.83
137	Rendering in cement to walls and buttresses of library.....	yards sup.	229	.25	57.25
138	Picked dressed limestone in foundations of library and piers in members' lobby and houses.....	feet super.	17069	.41	6998.29
139	Accounts rendered.....				15341.69
MATERIALS USED IN ADDITIONAL WORK.					377787.48
140	Potsdam stone for relieving arches.....	feet super.	4988	.90	4489.20

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.		
		Quantity.	Actual price.	Value.
141	Nepean stone in block, quoins for courts and tower... feet cube.	1268	1.25	1585.00
142	Ohio stone..... feet cube.	8969	1.25	11211.25
143	Brockville stone..... feet cube.	1010	.80	808.00
144	Arnprior marble..... feet cube.	240	2.00	480.00
145	Cement..... per barrel.	1414	2.25	3181.50
MATERIALS DELIVERED.				
146	Ohio stone..... feet cube.	7000	1.25	8750.00
147	Drift-sand..... yard cube.	185	.52	96.20
148	Bricks, ordinary..... mille.	500000	8.50	4250.00
149	Wrought-iron girders..... per ton.	21	220.00	4620.00
150	Rollled wrought-iron joists..... per ton.	11	140.00	1540.00
151	Oil putty..... per 100 lbs.	2350	4.00	94.00
152	Nepean flagging 6" thick for ducts in boiler-house..... feet super.	650	.30	195.00
	Total value.....			41300.15
	Drawback retained.....			\$651491.55
	Value of this and former certificates.....			65149.15
	Paid on account.....			586342.40
	Balance due.....			438163.95
				\$148178.45

Dated the twelfth day of November, 1861.  
We hereby certify that the above estimate is correct.

(Signed) HAMILTON H. KILLALY,  
THOS. MCGREEVY,  
FULLER & JONES, Architects.

(Signed,) JOHN BOWES,  
Measurer.



No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ON CONTRACT.		
		Quantity.	Schedule price.	Value.
	<b>MATERIALS DELIVERED.</b>			
21	Ohio, Brockville, Potsdam, and blue sandstone.....	6500	.45	2925.00
22	Rubble limestone.....	20	3.00	60.00
23	Bricks .....	47000	3.50	164.50
24	Lime.....	1000	.12	120.00
25	Drift sand.....	1363	.45	613.35
26	Roofing slates.....	390	5.00	1950.00
27	Plastering laths (split).....	150000	3.00	450.00
28	Clear lumber.....	140000	13.30	1862.00
29	Common lumber.....	40000	10.00	400.00
30	Oak in plank and boards.....	13000	25.20	327.60
31	Milled sheet lead.....	15150	.07	1060.50
32	Bar and rod iron.....	12000	.06	720.00
				69907.84
	<b>EXTRA WORK.</b>			
No. of item.		Quantity.	Actual price.	Value.
33	Ohio stone in quoins limestone, deducted.....	2144	1.18	2529.92
34	Plain labor to " .....	9600	.40	3840.00
35	Nepean stone facing to contract walls limestone.....	53127	.50	26713.50

36	Nepean stone in bond stones	"	Ddt.	.....	feet cube.	6620	.50	3310.00
37	Nepean stone in templates	"	Ddt.	.....	feet super.	2000	.23	460.00
38	Increased value masonry in principal tower	"		.....	yards cube.	1471	6.25	9193.75
39	Increased value of basement doors	"		.....	feet super.	600	.20	120.00
40	" " 1st. floor windows	"		.....	each.	9	17.00	153.00
41	Increased value 2d floor windows	"		.....	each.	7	26.50	185.50
42	" " architrave moldings, molded and panelled linings to be deducted on windows as per schedule	"		.....	feet super.	900	.83	747.00
<b>MATERIALS DELIVERED.</b>								
43	Nepean stone for facing walls	"		.....	feet super.	800	.42	336.00
44	Ohio sandstone	"		.....	feet cube.	940	1.25	1175.00
								48763.67

No. of item.	ADDITIONAL WORK.				ADDITIONAL.			
					Quantity.	Actual price.	Value.	
45	Earth excavation below original line of footings and in sewers &c.	"		.....	yards cube.	3436	.55	1889.80
46	Hard pan	"		.....	yards cube.	2424	2.50	6060.00
47	Rock excavation	"	ft. in.	.....	yards cube.	3474	2.00	6948.00
48	Rock	"	to 5.0 deep	.....	yards cube.	1951	3.00	5853.00
49	Rock	"	10.0 "	.....	yards cube.	1478	4.25	6281.50
50	Rock	"	15.0 "	.....	yards cube.	1031	6.00	6186.00
51	Rock	"	20.0 "	.....	yards cube.	620	7.00	4340.00
52	Rock	"	25.0 "	.....	yards cube.	277	8.00	2216.00
		"	30.0 "	.....	yards cube.			

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.		
		Quantity.	Actual price.	Value.
ADDITIONAL WORK.				
53	Filling from spoil bank, including ramming.....	5943	.75	4457.25
54	Concrete in foundations &c.....	99	3.50	346.50
55	Rubble masonry in walls, sewers, air-ducts.....	9914	6.50	64441.00
56	Block stone in boiler-houses.....	1242	8.00	9936.00
57	Cut ashlar in boiler-house, sewers and air-ducts.....	16980	.40	6792.00
58	Cut arches through walls and in air-ducts.....	5168	1.35	6976.80
59	Cut arches and inverts in sewers.....	6732	1.75	11781.00
60	Cut ashlar prepared in " and ducts.....	25050	.35	8767.50
61	Cut arches for air-ducts prepared.....	2160	1.20	2599.20
62	Bricks laid in thickened walls and in additions per M.    1941381    13.802    6791.05 per M.			
63	Deduct contract bricks per M.    957360    6.30    6031.36 per M.			20759.69
63	Cutting to played arches, jambs, soffits and arch-work in brickwork.....	13000	.20	2600.00
64	Ventilating, warm air and smoke flues.....	6000	.25	1500.00
65	Corbelling in brickwork for cornices.....	30000	.10	3000.00
66	Gloicester block stone in branch drain.....	256	.30	76.80
67	Circular dished bouchard labor to " .....	159	.75	119.25
68	Limestone flags covering " .....	205	.20	41.00
69	15 in. glazed socket drain pipes.....	128	1.20	153.60
70	9 in. " .....	539	.70	377.30
71	4 in. " .....	156	.40	62.40

72	Nepean paving floors of ducts.....	feet super.	4804	.25	1201.00
73	Nepean stone facing to walls.....	feet super.	9526	.50	4763.00
74	Nepean stone steps wrought.....	feet cube.	104	1.45	150.80
75	Potsdam stone in relieving arches.....	feet super.	354	1.00	354.00
76	Ohio and Brockville stone in dressings.....	feet cube.	6700	1.25	8375.00
77	Plain labor to Ohio stone.....	feet super.	6909	.40	2763.60
78	Circular " ".....	feet super.	350	.50	175.00
79	Sunk labor to Ohio stone.....	feet super.	1250	.52	650.00
80	Circular " ".....	feet super.	970	.64	620.80
81	Molded and chamfered labor.....	feet sup.	1840	.52	956.80
82	" " circular.....	feet sup.	700	.90	630.00
83	Gothic molded labor.....	feet sup.	300	1.00	300.00
84	" " circular.....	feet sup.	110	1.50	165.00
85	Rubbed face.....	feet sup.	3000	.09	270.00
86	Blue Ohio stone lintels in warm air vaults.....	feet sup.	30	.75	22.50
87	Ornamental iron work in stauncheons, finials, saddle bars &c.....	per lb.	3464	.45	1558.80
88	Wrought iron in straps, bolts &c.....	per lb.	2658	.15	398.70
89	Rolled iron joists.....	per ton.	15	140.00	2100.00
90	Centering to arches, sewers, hot air vaults, ducts &c.....	feet sup.	13842	.20	2768.40
91	Scaffolding.....				5000.00
92	Amount of day work as per bills rendered.....				2479.20
<b>MATERIALS DELIVERED.</b>					
93	Ohio, Brockville, Potsdam and blue sandstone.....	feet cube.	2771	1.25	3463.75
94	Nepean stone facing.....	feet super.	190	.42	79.80
95	Nepean flags.....	feet super.	400	.25	100.00
96	Gloucester limestone.....	feet cube.	225	.30	67.50
97	Rubble limestone.....	216 f. toise.	7	5.00	35.00
98	Drift sand.....	yards cubo.	1000	.45	450.00
99	Bricks.....	per M.	40000	8.50	340.00
100	Lime.....	per bush.	1000	.20	200.00



No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.		
		Quantity.	Actual price.	Value.
101	Roofing slates.....	30	8.00	240.00
102	Plastering laths.....	50000	4.50	225.00
103	Common lumber.....	12000	10.00	120.00
104	Clear ".....	20000	20.00	400.00
105	Oak in plank and boards.....	2000	30.00	60.00
106	Milled sheet lead.....	2000	.13	260.00
107	Bar and rod iron.....	5000	.06	300.00
	Total for Eastern block carried to page 388.....			226605.24
				345276.72

E. Dated the seventh day of November 1861.

We hereby certify, that the above estimate is correct.

(Signed) STENT & LAVER,  
Architects  
(Signed) JONES, HAYCOCK & Co.

(Signed) HAMILTON H. KILLALY.



No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ON CONTRACT.		
		Quantity.	Schedule price.	Value.
20	9 inch glazed socket drain pipe laid.....	146	.35	51.10
21	Syphon traps.....	2	2.00	4.00
MATERIALS DELIVERED.				
22	Ohio, Potsdam, Brockville and blue stone.....	7300	.45	3285.00
23	Rubble limestone.....	50	3.00	150.00
24	Bricks.....	20000	3.50	70.00
25	Drift sand.....	1700	.45	765.00
26	Lime.....	1200	.12	144.00
27	Roofing slates.....	260	5.00	1300.00
28	Plastering laths.....	180000	3.00	540.00
29	Common lumber.....	40000	10.00	400.00
30	Clear lumber.....	110000	13.30	1463.00
31	Oak in plank and boards.....	10000	25.20	252.00
32	Milled sheet lead.....	12000	.07	840.00
33	Rod and bar iron.....	11522	.06	691.32
52694.82				
No. of item.	EXTRA WORK.	EXTRA.		
		Quantity.	Actual price.	Value.
34	Ohio stone in quoins, limestone deducted.....	2706	1.18	3193.08
35	Plain labor to ".....	9227	.40	3690.80

26	Nepean stone facing to contract work limestone ded....	feet super.	61808	.50	25304.00
37	Nepean stone in templates.....	feet super.	1800	.23	414.00
38	Nepean stone in bond stones.....	feet cube.	6500	.50	3250.00
39	Wrought iron rivetted g'rders.....	per ton.	1395	2.20	136.71
40	Increased value of basement doors.....	feet super.	600	.20	120.00
41	" " first floor windows.....	each.	9	17.00	153.00
42	" " second " ".....	each.	7	26.50	185.50
43	" " Architrave moldings, molded and panelled linings, to windows to be deducted as per schedule.....	feet super.	900	.83	747.00
	<b>MATERIALS DELIVERED.</b>				
44	Nepean stone for facings walls.....	feet super.	1534	.42	644.28
45	Ohio stone.....	feet cube.	900	1.25	1125.00
					39563.37

ADDITIONAL WORK.		ADDITIONAL.		
No. of item.		Quantity.	Actual price.	Value.
46	Earth excavation below original line of footings, and in sewers.....	1715	.55	943.25
47	Hard pan	2904	2.50	7260.00
48	Rock	4085	2.00	8170.00
49	Rock	5680	3.00	17040.00
50	Rock	6091	4.25	25886.75
51	Rock	2818	6.00	16908.00
52	Rock	1023	7.00	7161.00
53	Rock	160	8.00	1280.00
54	Filling from spoil bank including ramming.....	3189	.75	2391.75

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.		
		Quantity.	Actual price.	Value.
55	Concrete in foundations &c.....	14	3.50	49.00
56	Rubble masonry in walls, sewers, air ducts &c.....	7620	6.50	49530.00
57	Block stone in boiler houses.....	960	8.00	7680.00
58	Cut ashlar in boiler houses, sewers, air ducts.....	21342	.40	8536.80
59	Cut arches through walls, and in air ducts.....	3626	1.35	4895.10
60	Cut arches and inverts in sewers.....	6624	1.75	11592.00
61	Cut ashlar prepared for do and in ducts.....	13168	.35	4608.80
62	Cut air duct arches prepared.....	664	1.20	796.80
63	Bricks laid in thickened walls and in addition.....per M.  1674110 13.80  23102.71			
	Deduct contract bricks as per Schedule.....   753060  6.30   4744.27			18358.44
64	Cutting to splayed arches, jambs, soffits and arches in brick work.....	10907	.20	2181.40
65	Ventilating, warm air, and smoke flues.....	4000	.25	1000.00
66	Corbelling in brickwork for cornices.....	20000	.10	2000.00
67	Nepean stone paving floor of ducts.....	6897	.25	1724.25
68	Nepean stone facing.....	3394	.50	1697.00
69	Nepean stone steps wrought.....	260	1.45	377.00
70	Potsdam stone in relieving arches.....	200	1.00	200.00
71	Ohio stone in dressings.....	3634	1.25	4542.50
72	Plain labor do do.....	2135	.40	854.00
73	Plain labor to circular.....	150	.50	75.00
74	Sunk " ".....	250	.52	130.00
75	" " circular.....	140	.64	89.60
76	Molded and chamfered work.....	310	.52	161.20

77	Molded and chamfered work circular.....	feet super.	210	.90	189.00
87	Gothic molded work.....	feet super.	100	1.00	100.00
79	" " circular.....	feet super.	75	1.50	112.50
80	Rubbed face.....	feet super.	2000	.09	180.00
81	Ornamental iron work in staunchions, saddle bars, finials &c.....	per lb.	3352	.45	1508.40
82	Wrought-iron in straps, bolts &c.....	per lb.	1300	.15	195.00
83	Rolled iron joists laid.....	per ton.	10	140.00	1400.00
84	Roof timbers and planks.....	M. B. M.	5000	50.00	250.00
85	Centering to arches, sewers, hot air vaults, air-ducts &c.....	feet super.	12304	.20	2460.80
86	Scaffolding.....				3500.00
87	Amount of day work, as per bills rendered.....				1132.22
<b>MATERIALS DELIVERED.</b>					
88	Ohio Potsdam and blue sandstone.....	feet cube.	1098	1.25	1372.50
89	Nepean stone facing.....	feet super.	300	.42	126.00
90	Nepean stone flags.....	feet super.	1050	.25	262.50
91	Rubble limestone.....	216 ft. toise	10	5.00	50.00
92	Drift sand.....	yard cube.	160	.45	72.00
93	Bricks.....	per M.	122000	8.50	1037.00
94	Lime.....	per bush.	2150	.20	430.00
95	Roofing slates.....	per square.	8	8.00	64.00
96	Plastering laths.....	per M.	20000	4.50	90.00
97	Common lumber.....	M. B. M.	12000	10.00	120.00
98	Clear ".....	M. B. M.	49000	20.00	980.00
99	Oak in plank and boards.....	M. B. B.	5000	30.00	150.00

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL.			
		Quantity.	Actual price.	Value.	
	<b>EXTRA WORK.</b>				
100	Milled sheet lead..... per lb.	5150	.13	669.50	224931.06
101	Rod and bar iron..... per lb.	6000	.06	360.00	
	Total value.....				317189.25
	Amount of Eastern block.....				345276.75
	Drawback retained.....				662466.00
	Amount of this and former certificates.....				66246.60
	Paid on account.....				596219.40
	Balance due.....				464391.54
					\$131827.86

Dated the seventh day of November 1861.

We hereby certify that the above estimate is correct.

(Signed) STENT & LAVER, Architects.  
(Signed) HAMILTON H. KILLALY.

(Signed) JONES, HAYCOCK & Co.

MEMORANDUM SUBMITTED BY THOS. MCGREEVY, CONTRACTOR  
FOR THE PARLIAMENT BUILDINGS, TO H. H. KILLALY.

No. 121.

Thomas McGreevy to  
H. H. Killaly, 58302.

October, 1861.

Honorable H. H. Killaly,  
Commissioner.

Sir,

I, the undersigned contractor for the Parliament buildings Ottawa, would beg leave to submit to you the following statements.

*First.*—The schedule of contract prices by which the work has been progressed since I began the building, is unfair and founded on error ; inasmuch as it does not exhibit proper prices for progress, neither is it based on the amount of the contract, nor are the prices adjusted in a proper manner, as regards the relative value of the work, taking the amount of the contract, as a basis. For instance, there is only three dollars and fifty cents per toise allowed for masonry, whereas fifty-six cents per foot is allowed for skirtings. Then again, there is only forty-five cents per foot allowed for Ohio stone, while fifty cents per foot is allowed for native sandstone. Excavation in earth is put down at twenty-one cents per cubic yard, while twelve dollars and fifty cents is allowed for iron work per 100 lbs. in long bars.

The prices allowed for many of the other items, are equally as absurd. It is quite clear, that it was made out improperly and based on wrong quantities. I would therefore beg to have it revised, in so far as it relates to progress ; because as it now stands, I do not get a proportionate or sufficient amount of money on the contract, whereby I am deprived of means which I should have to carry on my work.

*Second.*—The monthly estimates as now made out, do not show the exact state of affairs. All the materials used in extras, are progressed under the head of contract, which makes it appear that I have received a larger sum of money on the contract, than is really the case. And moreover, if the material so progressed had been put under the proper heading, I would have received more money on the work progressed, seeing that the schedule in many places, does not give more than one half the market value of the material. I would therefore request, that



you will give orders that the estimates for the future, be made out in such a way, that each item will appear in its proper place. I mean that the work embraced in the contract, shall be returned in contract work, and that in extras and additional work, returned distinct

*Third.*—During the progress of the work previous to the first of February last, I complained to the Clerks of works and Architects, that the prices allowed for extra work was not sufficient, and that it was impossible for me to go on doing work at such prices. They told me, that at the end of the season when the work would be measured up, the prices I complained of would be increased. Last January, when a show of measuring up the work was made, these same prices instead of being increased, were reduced ; and not only that, but deductions were made from some of the quantities, although no proper measurement had been made, from the commencement of the work. Had such a measurement been made at the end of last season, it would have been seen, that I had done a large amount of work, for which I did not get paid, thereby causing me much damage and loss ; having had to borrow money at high interest, when a balance was due me from the Department of Public Works for work done, and which was not measured. And in many instances, the progress estimate was not made out each month, as agreed upon ; but often for three months was I kept out of money, on account of no estimate being made, thereby causing me much damage, by not getting paid at the end of each month. I think that it would be but just and proper, that this matter should be taken into consideration by you, that I may receive compensation for damages suffered. I have repeatedly requested that such a measurement would be made, but up to this time it has not been done.

*Fourth.*—I have lost much valuable time by not having a sufficient quantity of work laid out for me. The whole of the months of April and May in the present year, was lost to me from this cause. I was not able to put on as many men as I otherwise would have done, had a sufficient quantity of work been laid out, and the men I had on, were kept much of their time idle from this cause. It was very injurious to me not to know, at least a few days before hand, the work that was to have been done. I have been frequently compelled to keep the men waiting in the morning, until I could see the Clerk of works, to ascertain what I would put them at. I lost the whole of the summer of 1860, in this way ; besides, what I did do was extra work, and I could not proceed with my contract. A delay of at least six weeks, was caused by the

change from Ohio to native sandstone, for the basement windows and weatherings of six towers. The main tower was stopped twice, once for a period of about seven weeks, caused by the change from Ohio stone to marble pillars for the interior, and again for a period of about five weeks, waiting for unusually large stones used in the extension, thereby not only keeping back the progress of the tower, but the two fronts adjoining. The back of the building, was also retarded for at least two months in order to excavate for, and build the main sewer, as many of the walls had to be built over it. For the damage caused by these delays, I am entitled to indemnification, as any addition to prices would not cover the losses.

*Fifth.*—During the progress of the work many alterations have been made, and additions put to the original plan and specification, which caused much delay and great expense. And in many cases these alterations and additions, have not been progressed, (I mean by the word progressed, that they have not been put in the progress estimates), although I have repeatedly called the attention of the Architects to the fact. Below I beg to submit a list of these works, which have not been progressed, in order that you may give instructions to have it done.

**LABOR ON SANDSTONE QUOINS.**—The specification shows that an arris to plumb by, is all that is required on them. Notwithstanding, I have been compelled by the Clerk of works to bouchard them as fine as possible, and in some cases I had to fine tool them.

**ALTERATIONS IN SALOONS IN BASEMENT OF BOTH HOUSES.**—The plans show only two small sandstone pillars; this work should be measured wholly as extra, and the pillars deducted from the amount of contract.

**EXTENSION OF MAIN TOWER TEN FEET FURTHER OUT THAN SHEWN ON PLAN.**—This, above all others, was to me a source of loss, having had to make quite a different tackle, scaffold &c., from the one I had used, and on a much more expensive principal, on account of its distance from the building, and serving only for the tower, where if nearer, would serve for the building also. I would therefore request, that the present tower be measured wholly as additional work, and the one intended to be deducted, as the amount received for addition to tower, falls greatly short of what it cost.

**BLOCK AND CUT STONE IN PIERS UNDER MEMBERS LOBBIES AND PIERS OF BOTH HOUSES.**—The price of the stone in this work should be the same as that in boiler house.

Built and rolled girders, (iron) the specification does not provide for them.

**BROCKVILLE INSTEAD OF OHIO STONE USED IN BASEMENT WINDOWS, DOOR JAMBS, ARCHES, DRESSINGS, PLINTH, &c.**—This stone is so hard and so much time lost by it, that I expect to get paid for it, as altogether extra.

**RUBBING SHAFTS AND BASES OF COLUMNS IN PUBLIC HALL.**—This was ordered by the Architects. The specification does not show that such had to be done in any case.

**JAMBS AND ARCHES FOR TWO DOORS FOR CARTWAY, (CUT LAST WINTER) REPLACED BY OTHERS ORDERED THIS SPRING.**—There are many other items too numerous to mention, but which I shall be happy to point out when requested so to do.

*Sixth.*—I would request that you would abolish the present system of measurement which, is unfair and one-sided, and adopt one fairer and more just to the contractor, say as follows :

Mason work measured solid, including cut stone &c.

Brickwork measured solid, except where the opening exceeded thirty-two superficial feet, and twenty-two bricks allowed to the solid foot.

Cut stone cubed in the rough, and one bed and joint measured as plain face.

The prices allowed for extra work is quite insufficient to cover the actual cost, and in many cases leaves no margin for contingent expenses.

The great quantity of additional and extra work, required that a much larger number of men be employed than otherwise would, thereby causing me to pay an unusual high price for labor. And the quantity of material used on these additional and extra works, has the same effect on the price of material required for the contract. Besides, the delay which each item of extra work causes in every respect, warrants an increase of price, over and above what would be allowed in other respects. For if the additional work, has caused me to pay more on my contract work, (which it has done) than I otherwise should have done, I am entitled to be paid for such increase.

Below, I will endeavour to point out to you, the principal items for which a sufficient price has not been allowed : 1st Excavation in earth in additional work ; most of which was done during the depth of winter, when the clay was frozen so hard, that powder had to be used, as it was found to be impossible to remove the earth otherwise, and in many places where the excavations were deep, large boulders and hard pan, composed the mixture to be removed. All this was measured as loose earth. The accumulation of water in the deep excavations was a great

cause of expense to me. Wheeling had to be done for a distance of from three to four hundred feet.

Less than seventy-five cents per yard would not pay for this work. 2nd. Filling to walls, most of which had to be brought from the city and afterwards wheeled a considerable distance through apertures in the walls, and rammed down hard ; ought to be paid for at eighty cents per yard

3rd. Excavation of rock in drains and ducts, and boiler house. The cost of this description of excavation is almost incredible. The great depth of the work, necessitated the use of derricks, tackle &c., and the water which kept constantly accumulating, on account of the strata inclining towards the building, required to be pumped and bailed out of the way of the miners. The narrowness of the several drains caused a great waste of labor and powder. By way of illustration, I will give you the result of one week's work in the main sewer, and the actual cost of the same.

1 Foreman	6 days at	\$1.50.	.	.	.	\$9.00
12 Miners	6 " "	1.00.	.	.	.	72.00
1 Double team	6 " "	3.00.	.	.	.	18.00
6 Men bailing,	5 nights at	2.00.	.	.	.	60.00
Powder and fuse	.	.	.	.	.	15.00
Sharpening tools, wear and tare	.	.	.	.	.	27.00
						<hr/>
						\$201.00

Quantity taken out, 18 yards for which I received

\$3.50 per yard	.	.	.	.	.	63.00
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Dead loss	.	.	.	\$138.00
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You can see from this, that more than double the amount is loss, and that a very large price would not suffice, but the price received is quite insufficient. I could cite a great many other instances, where the same result has happened, and where the price allowed is quite ruinous. With regard to the boiler house, the same arguments apply ; and moreover as it is placed in the centre of the buildings, all the stone had to be drawn, a great distance. Then again, much of it had to be done during the summer season, when a great number of men were at work on the walls of the building, who were obliged to leave off at every blast. The loss which I sustained from this cause, is incalculable ; and much damage was done to the work in course of erection, and to the sheds, by the con-

tinued blasting. Taking everything into account, I am satisfied that anything less than four dollars and fifty cents per yard, irrespective of depth—or all rock to five feet in depth, three dollars per yard—to ten feet, four dollars per yard—to fifteen feet, five dollars per yard—to twenty feet, ten dollars per yard, will not pay for this class of work. For it is not only the price which would pay for this work and give a profit ; but the amount of time lost, by the men leaving their work, (some four hundred) and the damages to cut stone and building repaired, which should be embodied into the price allowed.

4th. The masonry in the foundations, owing to its great depth, was very difficult to build. The water which had accumulated very deep, had to be removed, and in many instances coffer dams built, to enable the mason work to be done. The irregularities in the rock, had to be cut down, so as to admit of the foundations being started on a level surface. A great portion of the extra masonry, is at a very great height, which requires a great quantity of machinery and tackle to hoist the material. Besides the work is of a better description than the generality of rough rubble ; in many cases, beds and arrises had to be cut on the stone. The immense amount of masonry in addition to my contract, will also show that it was necessary to employ a much greater force, than I should otherwise have done. The extra material also caused an increase in price, which injured me in my contract, and deprived me of proceeding with it, and losing most of the season in doing this work. The price allowed for this work is eight dollars per toise, or four dollars per yard, which is much too little. I would claim as a remunerative price, seven dollars and fifty cents per yard, irrespective of height.

5th. The price allowed for brick work, is by no means sufficient, if you take into account the great trouble there is in obtaining bricks in this city, there being no regular trade in them ; as in most other cities and clay of a bad quality. I have been compelled to open yards myself at great expense, in order to supply bricks for additional and extra work : I have repeatedly refused *eleven dollars* per thousand, for those bricks delivered in the yard. The manner in which the walls are cut up by flues, renders it very tedious and expensive to lay the brick ; and as the extra work caused thereby is only an addition of one half, one or two bricks to the walls, carried up the whole height of the building, the additional expense is more than the extra work realises. I would therefore request that you would put the price of brick laid in the walls, at *sixteen*

*dollars* per thousand, and the flues at twelve and a half cents per foot superficial.

Cost of brick . . . . .	\$8.50
Laying, including sand and lime . . . . .	4.75

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\$13.25 per thou.

6th. NEPEAN SANDSTONE FACING.—The price heretofore allowed for this stone, is rated at twenty-one cents per foot super, over and above lime stone, which is much below the actual cost, as I shall point out to you.

When the Architects reported this price, it had been represented to them that the stone could be had for a nominal sum, and that the quarrying would be nothing, as it could be raised with bars and then laid on the building without dressing; and that the roads, which were then almost impassible, would be repaired at once by the owners of the quarry, all of which representations were soon found to be incorrect.

As soon as I had actually commenced to build, the owners of the quarry doubled their demands, and left the roads to me in the worst possible state imaginable. However I was obliged to take stone for that season's operations from them; but the quarry soon passed into other hands, when it was found impossible to get stone at any price. I was therefore obliged to seek stone elsewhere, and to keep a staff of men continually exploring and opening up quarries, and as often abandoning them, after having spent large amounts of money in buying the right of working on the lot of land. All of this great cost and loss of time, was caused by my being required to use this sandstone, instead of lime stone as specified in the contract. At length I found a quarry out of which I could get some stone, and that only this last spring, when owing to the lateness of the season, I had to put on a much larger force of men, than would have been required had I found a quarry earlier, in order to get the stone ready for laying this summer. Add to this, the bad state of the roads and the hardness of the rock, which required powder to remove it, and then the immense quantity of stone which went to loss in dressing, which had to be done in the quarry, to save the expense of cartage. And when it came to be built in the walls, I found that it had to be dressed over again, which caused an additional waste. This was owing to the irregular joints of quoins, window and door jambs, and the tedious labor round arches of windows, quatre foils and batter to basement walls. The work had to be of a better class than the specification called for; no stone would be admitted into

the work, unless it was dressed on the face as well as the beds and joints, although it is specified to be « random range work, with horizontal beds, vertical joints, *no dressing on the external face;* » moreover the schedule of prices gives fifty cents per foot, as the value of native sandstone in the rough, for contract.

The actual cost of this stone, is as follows :

Right of quarrying . . . . .	2½
Labor in “ . . . . .	9½
Cartage 13 miles . . . . .	15
Cutting in quarry . . . . .	14½
Cutting on the works . . . . .	7
Waste in building . . . . .	6½
	<hr/>
	55½
Add profit 20 p. cent. . . . .	10½
	<hr/>
	65½
Deduct limestone not used. . . . .	8
	<hr/>
	57½

Taking all this into account, I think I am entitled to fifty-eight cents per foot. I would request that before deciding on the price of this stone, you would visit the quarries in Nepean, and also the building, and see the immense quantity of rubbish that has been accumulated from the stone used in facing.

7th. CUT STONE TO SIDES OF DUCTS, BOILER-HOUSE, &c.—The price allowed for this, until reduced last winter, was ninety cents per foot for boiler-house, and forty-one cents per foot for sides of ducts &c. This is quite insufficient to pay. Owing to the very heavy beds, the stone was very expensive to cut and had to be brought a great distance. The most of the stone when measured only on the face, would not bring enough to pay for the cutting of it, and this is the system of measurement that has been followed heretofore.

The great hurry in which this work had to be done, rendered it still more expensive than it would otherwise have been. I would therefore claim eighty-five cents per foot superficial measure, and that arches be paid for at one dollar and fifty cents per foot superficial.

8th. OHIO STONE.—The large quantity required in extra work, caused an advance both in the price of stone and labor thereon. At times the

whole force of the stone cutters, had to be employed cutting extra work, thereby neglecting the contract. And moreover, lake-freight has been unusually high during the last two seasons. As an instance of the absurd prices allowed both for stone and labor, I will submit the following, out of many cases, where the schedule was taken instead of actual value, to make a price for additional work.

<b>4 Pieces Ohio stone for weathering of main</b>			
tower 306 ft . . . . .	at 85 cts.	\$260.10	
Stone cutters 82 days. . . . .	at \$1.75	143.50	
Laborers assisting do 15 days . . . . .	at 1.00	15.00	
Carpenters, making roads, fitting tackle &c.,			
to bring stones to tower 39 days . . . . .	at 1.50	58.50	
22 laborers 5 days each hoisting and bringing stones to tower 110 days . . . . .	at 1.00	110.00	
Sundries, such as ropes, nails &c . . . . .		30.00	
			<hr/>
Cost of the 4 pieces . . . . .		\$617.10	

I have received as follows :

295' 3" stone . . . . .	at 75 cts.	\$221.44	
184' 8" moulded work . . . . .	at 40 cts.	73.73	
92' 0" plain face on do . . . . .	at 28 cts.	25.76	
62' 0" sunk work on do . . . . .	at 42 cts.	26.04	
			<hr/>
			\$346.97
			<hr/>
Actual loss. . . . .		\$270.03	

I would therefore claim as a remunerative price for Ohio stone.

Block. . . . .	\$1.40 per ft.	
Plain face on do . . . . .	45 " "	
Moulded work on do . . . . .	65 " "	
" circular do . . . . .	1.00 " "	
Sunk face do . . . . .	75 " "	
" circular do . . . . .	90 " "	
Mitres and chamfers . . . . .	28 " "	

I have repeatedly brought the foregoing statements, before the Architects and Department of Public Works, for adjustment. I have also complained of the arbitrary manner in which I have been treated, both by Clerk of works and Architects ; so far I have received no redress and



now appeal to you. For the treatment I have received at the hands of the Architects and Clerk of works, I am entitled to a large amount of damages, and for which I hold the Government responsible. I have been obliged at great expense and inconvenience, to erect scaffolding on the exterior of the whole of the building ; so much is this scaffolding in the way, that I am obliged to carry all the material up by the interior of the building. From this cause alone, I have suffered damage to the amount of ten thousand dollars.

(Signed) THOS. MCGREEVY,  
 " per ROBT. H. MCGREEVY.

### SCHEDULE OF PRICES

CLAIMED BY THOMAS MCGREEVY FOR ADDITIONAL WORK.

	Progress.	Claimed.
Rock excavation irrespective of depth. per yard super.	1.25 to 5.00	4.50
Earth excavation..... " " ...	.30 @ .40	.75
Filling to walls and levelling..... " " ...	.35	.80
Masonry, towers included..... " " ...	4.00	7.50
Cut stone in boiler-house, air ducts &c. per foot.....	.41 @ .90	.85
Arches to sewer and air ducts..... " " ..	1.25 @ 1.50	1.75
Brickwork per M. ....	13.50	16.00
" in arches..... per foot super.		.20
Labor on flues..... " " lineal.	.7	.12½
Nepean facing ..... " " super.	.21	.58
Flagging irrespective of thickness, Nepean..... " " " ..	.7 @ .38	.45
Potsdam stone in relieving arches.... " " " ..		.90
Ohio stone..... " " cube..	.75	1.40
Plain face on do..... " " super.	.28	.45
Moulded sunk..... " " " ...	.40	.65
" circular..... " " " ...	.62	1.00
Sunk face..... " " " ...	.42	.75
" circular..... " " " ...	.56	.90
Mitres and chamfers each.....	.25	.48
Bockville stone..... per foot cube..		.80
Labor on do 50 p. ct. more than Ohio, concrete on bottom of ducts and drains..... per yard 1 foot thick..		2.00
Ditto on floor ..... per yard super.		3.00
Rolled iron joist..... per ton.....		160.00
Arnprior marble..... per foot cube..		2.50
Labor on do ..... " " super..		3.75

## MEMORANDUM SUBMITTED BY JONES, HAYCOCK &amp; Co., CONTRACTORS FOR THE DEPARTMENTAL BUILDINGS, TO H. H. KILLALY

No. 122.

Jones, Haycock & Co.  
to H. H. Killaly.  
58301.

Ottawa, September 25, 1861.

To the Hon. H. H. Killaly,  
Commissioner &c., &c.,

SIR,

We the contractors for the Departmental buildings at Ottawa, beg to submit to you the following statements :

1. That the monthly estimates of the value of work done and materials delivered, do not correctly shew the true state of accounts ; materials delivered, whether for contract works or otherwise, are uniformly estimated as if for contract alone, at the rates set forth in the contract schedule ; no distinction is made in many cases between work done, which is properly included in our contract, and works extra and additional, which should be valued on a different basis.

We request that the estimates should be revised, and that whatever is contract work should be valued as such, and what is extra and additional should be valued as such ; and that when the work is finished, whatever works there are called for by the contract that may be found to be not built, the value of the same may be deducted from the gross amount of our contract, but that no deductions on this account be made from progress estimates, except where prices can be agreed upon.

We beg to submit herewith a list of such items as we claim should be valued as extra and additional works not included in our contract, which heretofore have either been valued as contract work, or partly contract and partly extra, or else not measured at all.

1. Ohio-stone in quoins and labor thereon.

*Note.*—See specification quoins, described as ordinary rubble lime stone, nowhere otherwise alluded to.

2. Rubbing Ohio-stone.

*Note.*—Specification nowhere calls for it, specially ordered by Architects and Clerks of works.

3. Extra carving.

*Note.*—Cornice over Governor General's entrance &c., and pinnacles, entrance itself, rope mouldings, spandrels of windows, internal windows, gorgoyles, bones, cornice stops, chimney heads &c.

4. Extra Ohio-stone and dressing quoins as before—all windows built fair inside; original plans did not go beyond glass line except in ashlar finished entrance of main-tower, cornice arches and jambs in corridors, registers to hot-air flues, chimney shafts, extra chimneys, quatrefoils main-tower, cut-stone in extensions E. and W. blocks, (see N. W. corner W. block, E. entrance ditto entrance wing and tower E. block), ditto in doors and windows' basements, building W. block. Three light windows changed to four, &c., quatrefoils inserted various places—extra work on N. W. tower W. block. Finally, the whole character of the dressing of cut-stone is of a more expensive nature than plans and specifications would lead those tendering to suppose.

5. Brickwork. Hot-air vaults, flues from do, and for ventilation, and from extra fire-places. Increased size of chimneys caused by ditto arching over and corbelling to support chimneys. Inner walls wherever altered from original plans, corbelling of cornices. Brick lining extra ventilation chimney ventiduct in attics; party walls in third story E. block, cutting brick for jambs and arches. Discharging arches over doors and windows.

6. Nepean stone used in templates under iron beams and in bond stones, instead of lime stone as specified.

7. Blue stone.

*Note.*—The specification calls for « Ohio, or other approved stone » for stair cases; of course, stone of equal quality. By Architects' orders we have got blue stone, which is a much better stone for stairs, Ohio being too soft. This stone costs more, and owing to its superior hardness is worth 30 per cent more to cut.

8. Masonry.

Extra masonry in all extensions, areas &c., partly or wholly estimated as contract. Masonry in main-tower and boiler-houses is of a much better quality than the rest of the masonry in building, which is as described in the specification « rough rubble, » while this is chiefly built of block stone, which required considerable dressing, costs more than rubble, and is more expensive to build. Walls carried up above top of tie-beam as shewn on plan, and large stone templates under each beam, instead of a wall-plate as specified.

9. Scaffolding.

*Note.*—Nothing is said in specification; we anticipated building as is usually done, over hand, and refused to build otherwise, until peremptorily ordered to do so in writing, by the Architects.

We claim to be paid, 1st, extra cost of scaffolding . . .	\$6000
2. Extra cost to us of setting cut-stone, in consequence of scaffolding, difference between 8 and 15 cts. 70,000 feet @ 7 cts. . . . .	4900
	<hr/>
	\$10,900

10. Nepean stone masonry lined with white brick in safes, in place of fire-brick by agreement, no extra, no deduction, also tongueing and grooving roof boards set against use of laths by agreement, no extra, no deduction.

11. Corbelling out brick cornices, labor only.

12. Extra joiner's work.

*Note.*—Additional doors in basement and elsewhere, basement windows, 1st and 2nd floor, do additional extra labor and material on 1st and 2nd story windows and basement doors above. Specification contract calls for single thickness of sash above transom, and that fixed windows are ordered with double heads, both hung with weight and pulley. Size increased from 9 feet high by 9 inches thick to 12 feet high by 13  $\frac{1}{4}$  inches thick, covering an addition to allow of inside blinds, rebating for weather, and to allow for extra weights and sashes; the 2nd floor windows are similarly increased, and, in addition, the mullion has been changed from a plain turned mullion to one part turned and part octagonal, with elaborately carved cap and base. Extra cost of this mullion alone is \$15.

The architraves of doors and windows, as per contract, are perfectly plain 8 inch architraves with no mitres, such as can be bought at any machine shop for five cents per foot.

The architraves ordered in place of these, girt 21 inches, design very elaborate, requiring 12 different knives and 48 handlings. They cost 1  $\frac{1}{4}$  per foot, on trial.

Base blocks altered from a plain block 2 by 8 to a semi-octagonal one, glued up of different pieces and requiring 35 handlings.

13. Windows in stair cases, vestibules, corridors, council chambers &c., are now fitted for iron sash. Contract calls for wooden windows, with line and pulley.

14. Extra plumbing work upon addition to contract building, also extra slating and covering of flats to ditto.

15. Covering of flats of buildings, including towers, boiler-houses, and water-closets with Morewood & Co's galvanized continuous iron, as per agreement with Department for extra sum of \$4000, and privilege to sub-

stitute galvanized iron for lead in ornamental flashing at ridge, without deduction.

16. Extra fire-proofing, rolled beams in extra rooms, ceilings of 2nd story, and increased weight in consequence of increased size of rooms.

II. We beg to point out to you that the system of measurement used is arbitrary and not uniform, and we request that a fixed system of measurement be established for the whole works.

We would request :

1. That masonry be measured solid and including cut-stone, and that no walls be measured less than 2 feet thick, as has been done.

2. That masonry in drains and air ducts be measured solid.

3. That Nepean facing be measured upon the whole superficial girt of the building, deducting no openings.

4. Brick to be computed at 22 per foot cube, instead of 20 as has been done. All splayed and arch-work to be measured per foot super in addition, upon rates of price allowed by English rule.

5. Cut-stone to be measured by rules of English measurement. 1st stone to be cubed to its extreme dimensions before cutting. 2. Plain-face labor to cover in addition to the face, one bed and joint. 3. Sunk and moulded work to be measured in addition, by girding wherever it occurs.

6. That centres be measured by the total area of soffit of arches.

III. We claim that many of the rates fixed for extra and additional works are either, 1st. Insufficient in themselves, and not « fair current rates » ; or 2nd, they do not reimburse us for the extra expense in labor and material incurred by us upon the whole work, contract and extra, in consequence of the changes, alterations, and additions which have been made.

1. Where the rates are insufficient in themselves, we shall point it out as we take up each price in succession ; and there is no use going into any further detail here.

2. The second point that we can establish is, that the various alterations, changes, and additions to the original contract work, have had the effect of putting us to extra expense, by raising the value of labor and materials, by increasing the actual amount of labor, and by putting us to serious delays and detentions ; all of which is applicable not only to the extra works themselves, but to contract and extra works both.

The 4th. subsection, 13th clause of our contract (see page 14) says :

« If any change, alteration or addition, either in the position or details  
« of the works embraced in this contract, or in any of the materials

« therefor, shall be required by the Commissioner, the contractors will  
 « make such change, alteration, or addition ; and if such change, alte-  
 « ration, or addition shall entail extra expense on the contractors, either  
 « in labor or materials, the same shall be allowed to the contractors, »  
 &c., &c.

Under this clause, therefore, we have a right to be paid for whatever extra expense we can shew we have incurred in consequence of such changes, &c.

(\*) 1. Excavation and filling under and around buildings.

Much of this has been either frozen ground or hard pan, filled with boulders requiring blasting, or cemented gravel, as difficult to excavate as rock.

It has been done chiefly in winter, and in narrow and confined places where men and carts could not work to advantage, and where operations disturbed others. The hauls have been long, owing to the necessity of getting round the piles of stone, lumber &c., which blocked up the whole ground.

We would point out, that in excavation from spoil banks, this clay mixed with lime stone gravel cements itself together, if left for a while, and has to be picked like original excavation ; also in this item should be included the cost of levelling and filling extra rooms and refilling and ramming round extra walls ; in many cases the earth was carted from spoil banks to outside of building, and then rehandled, wheeled in, and rammed : This has never been allowed us.

Some of the excavation has been priced at 25 cts., some 30 cts. and some 60 cts. We consider that we should be paid 75 cts. for all excavation, and \$1.00 for that which is rammed around walls.

In one particular instance (item No. 2, west block) extra excavation

(\*) The remarks referring to items Nos. 1 to 9 in the schedule appended to these explanations, are applicable as to the class of work performed and the difficulties encountered. Nevertheless, the prices claimed we considered in some cases to be higher than the circumstances would justify, inasmuch as the implements and tackle required in removing heavy blocks of stone and boulders from the several excavations, rendered the deeper cuttings of less proportionate expense than that nearer the surface.

The prices claimed and allowed are as follows :

No. 1	Claimed.	Allowed.
	75 cts. per yard.	55 cts. per yard.
" 2	2.50 " "	2.50 " "
" 3	2.50 " "	2.50 " "
" 4	1.00 " "	.75 " "
" 5	2.10 " "	2.00 " "
" 6	3.25 " "	3.00 " "
" 7	5.00 " "	4.25 " "
" 8	6.00 " "	6.00 " "
" 9	7.00 " "	7.00 " "

has been returned at 21 cts., because it was said, that « it was in progress.» This is precisely the same sort of hard pan excavation filled with large boulders and done when frozen, for which \$2.75 has in other places been allowed, and should be priced at the same.

The extra rock excavation in foundations, rendered necessary by going down to a solid foundation, and by the system of heating and ventilation, has been insufficiently valued. Most of it was done in deep and narrow trenches, and had to be raised by derricks, and some of it pumped free from water, all of which have made the cost to us nearly as much as that in the drains and air-ducts.

## 2. Excavations, drains, and air-ducts.

This has been enormously expensive work to do, owing to its being in narrow trenches where men could not work to advantage, to its depth below the surface, and to all below 15 feet being under water excavation.

This was owing to the inclination of the strata which prevented the cut from draining itself, the bottom being thus :



so that we had to keep constantly pumping and bailing. The rock was seamy, so that the powder would often blow out without lifting it, and the holes had to be refilled ; this was particularly the case in the Western drain, and the strata were much contorted, so that the stones seemed to be dove-tailed into each other, requiring much below to get them out. (\*)

The cost of these drains and air-ducts should be compared to that of a tunnel, rather than to open cutting ; or rather to the shafts of a tunnel,

(\*) We may also state that the cost to us of these drains has been materially increased, by the fact, that after beginning them narrow as laid out for us, we were obliged to widen them several times, in order to get room to carry out the system of air-ducts as designed.

Items 10th to 16th in the schedule comprised in the remarks No. 2, have been fully considered, and prices arrived at corresponding with the class of work done, including such contingencies as arise in the execution of such works.

The personal attention of the Honble, the Commissioner and the Deputy Commissioner was directed by the Architects to this particular work during its progress, and the peculiar difficulties incident thereto pointed out to them.

The prices claimed, are, however, in some instances greater than the circumstances would justify, and are fixed as follows :

No. 10	Claimed.		Allowed.	
	75 cts. per yard.		55 cts. per yard.	
" 11	2.25	" "	2.00	" "
" 12	3.25	" "	3.00	" "
" 13	5.00	" "	4.25	" "
" 14	6.00	" "	5.00	" "
" 15	7.00	" "	7.00	" "
" 16	8.50	" "	8.00	" "

as in the breast the material can be put upon cars and hauled away, while in this work, like the shafts of a tunnel, or mine, the rock has to be raised by derricks and then put upon stone boats and drawn away.

So much for the actual cost of this work, but this is one of the cases referred to above, which affects other work, and increases its cost. Much inconvenience and expense were felt in the delay to the buildings caused by blasting so near them, often stopping 300 or 400 men, and disarranging their work; damages were caused both to our own works, and to the property of others which we had to pay, although we took as much care as we could, and went to considerable expense in covering the blasts and cut-stone.

Our available service ground is but small. These drains and the machinery connected with them, cut it up and prevented us from sorting our materials on delivery as should have been done, so that it has taken one additional laborer to each mason to pick cut-stone.

All these things we have no means of being paid for, except in the prices fixed for excavation in drains and air-ducts.

### 3. Brick work and flues.

This item is a good example of the extra expense which alterations and additions have put us to, as noted above.

The buildings, as shewn in our contract plans, would have required some three and a half millions of brick. But the works now ordered and in progress will consume over six million three hundred thousand.

The effect of this large demand in a limited time (all of which we could not possibly supply from our own brick yards) has been to raise the market value of brick from \$4<sup>7</sup>/<sub>8</sub> to \$8<sup>00</sup> p. M., which thus far has come out of our pockets.

Then as to the labor of laying brick, the walls have been cut up since the original plans were made, with a vast number of flues and air-passages required by Garth's system of heating and ventilation.

In ordinary work, such as our original contract called for, a bricklayer can lay 1500 bricks per day: now, they do not exceed 750, in consequence of being delayed by these flues which are not always perpendicular, and involve great delay in twisting them about to the points directed.

These alterations not only affect the value of the extra number of brick required for their construction, but that of all the brick in the building. Had these alterations been embodied in the original plans, every contractor who tendered would have increased his price.



We claim, therefore, under the above-quoted clause, to be paid such a price for brick and flues as shall remunerate us for the extra price of brick, and the extra cost of laying throughout the building. (\*)

Cost of brick . . . . .	4.75 p. M.
1. bricklayer 2	
1. laborer 1	
—	
3	
Could lay $1\frac{1}{2}$ M. Cost laying. . . . .	2.00
	— 6.75
As altered, cost of brick . . . . .	\$8.00
1. bricklayer 2	
1. laborer 1	
—	
3	
Lay 750. add $\frac{1}{4}$ , 75	3.75 11.75
	—
Extra cost	5.00 p. M.

6300 M. brick at \$5.00 per M. (\$31500) which represents the extra expense entailed upon us by the departure from the original plans of brick work.

This sum of \$31,500 has to be distributed over say 2800 M. of extra brick, 34600 sup. ft. flues (†) ; or it may be looked at in another way ;

(\*) On carefully considering the question of brickwork comprised in additional works, and referred to in the statement of contractors, it is known that the great demand created for bricks in the locality has necessitated their being obtained from remote parts of the Province, east and west, at great cost and risk, (exceeding calculations for ordinary works) and together with the unusual construction of the walls incurring considerable cutting and waste of bricks which cannot be measured in the finished work.

The price allowed the contractor in the progress estimate is inadequate to meet the cost.

The price claimed is \$16 per M.

Price allowed \$3.80 per M.

(†) Then we should have party walls as per contract . . . . .	2,200	
Add thickening . . . . .	1,300	
	—	
	3,500	
Hot-air vaults &c. . . . .	1,000	
Ventiduct. . . . .	500	
	—	
	5,000	at \$16 \$80,000
Deduct brick in party walls according to contract not built. . . . .	2,200 M at $6\frac{1}{4}$	13,640
	—	
		66,360
Outside wall contract . . . . .	1,300 M at $4\frac{1}{4}$	8,060
	—	
Total . . . . .		\$74,420

that the party walls have been so cut up and changed by flues and thickening, that they are all an extra.

#### 4. Masonry.

The same argument which has been used in regard to brickwork applies to masonry. Our additional masonry is so peculiarly situated, that it had to be built before we could go on with our contract, as in the case of extra foundations ; or where, in order to get service ground round the buildings, we were obliged to push on our drains and air-ducts regardless of expense, so as to be able to finish the walls and roof the building this year. We were obliged to pay more for material, and higher wages, than we should have done if our wants had not been so pressing, and this has acted to our disadvantage, not only in our extra masonry, but in every toise that we lay this season.

The price uniformly allowed for extra masonry heretofore, has been \$8 per toise, \$4 per cubic yard ; but our extra masonry is of very different degrees of cost.

The heavy walls in foundations are the cheapest, while for each story that we ascend the expense is augmented, until we come to extra work about roof, chimneys, and towers, which costs us three times as much as we get, owing to there being a great deal of preparation required, for a very little work.

We consider, that taking into account the effect of the extra masonry upon contract, the least we should be paid for masonry in foundations is \$6½ per cubic yard. Taking that as a basis, the masonry,

1st. story would be worth . . . . .	\$7½
2d. “ “ “ . . . . .	9
All above . . . . .	12

or the whole may be averaged.

The masonry in drains and air-ducts is estimated also at \$4 per yard. In the case of drains which are of cut-stone, a price is added, \$1.75 per foot super for arches, 32 cts. per foot super, picked ashlar sides. The first-named price is a fair one, but the second is quite insufficient ; We claim 60 cts. per foot super.

In the case of air-ducts, the only price allowed is \$4 per yard, which is a backing price. To this should be added enough to cover arch-work and face-work. We claim that we should be paid \$7 per cubic yard with no openings deducted.

Some of the air-ducts are covered with cut-stone arches which have been valued at \$1 ft. per foot super, while precisely similar work “ cut-

stone arches through outer walls of buildings is valued at \$1<sup>11</sup>/<sub>16</sub> per foot super " which price we claim for these.

The face-work in boiler, houses which is cut to a batter, was originally estimated at 90 cts. per foot super, but afterwards a large part of it was reduced to 72 cts.

We ask that it may be increased again to 90 cts. and that we be allowed \$10 per yard for the masonry, it being block stone instead of rubble.

The masonry in main tower is chiefly of block stone, instead of rubble, large stones 6 x 12 x 2 deep were used in the foundations  $\frac{1}{2}$  ton to 1<sup>1</sup>/<sub>2</sub> weight.

The style of masonry is worth at least \$10 per yard.

From which deduct contract price 1.75

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Leaves 8.25 extra price to be paid on

this class of work.

We claim also that besides these particular examples, the masonry throughout the building is of a better class than the specification calls for, which is merely « common rubble » admitting spall filling, whereas it has been built in solid masonry of the best description, which the size of stone would admit, as may be seen.

#### 5. Nepean stone.

The price heretofore allowed has been 21 cents per foot super, of face, in addition to our contract price. This sum was based upon reports from the Architects before the stone was worked by us, and was predicated upon the supposition that the stone was so well bedded that it could be raised by bars without powder, and broken at once by hammers into pieces fit for building, with but little waste. It was supposed that the stone could be laid at once into the wall, as according to the contract specification, « hammered only and not tool dressed. »

We would represent that instead of this being the case, that,

1. The quarries from which we obtained the sandstone are not those upon which the Architects' estimates were based, but of a much harder and more expensive nature to work. It was, and has been quite impossible, either to get possession of, or to obtain stone from, those quarries, as we can shew.

2. Instead of the stone being raised by bars with little waste, it had to be all drilled, and raised with powder, and cut into blocks with plug and feather, necessitating holes 3 in. deep and 4 in. apart, which in this very hard flint-like stone is a slow progress and hard on tools.

The waste was great, at least one half being rubbish, as can be seen at the quarry.

3. Instead of being allowed to lay the stone into the wall with only hammer dressing, (as the specification calls for and as we began to do), we were ordered to cut all the beds and joints ; this it need scarcely be said is an expensive process, from the hardness of the stone. But there was another element of cost not at first sight so apparent.

We soon found that the waste was very great and in March last made two very careful measurements of the stone before and after being cut. In one instance 4590 feet as delivered from the quarry to the cutters measured 2565 feet after being dressed, and again 3100 feet made 1755, which is a loss of 44 per cent.

4. After quarrying, cutting and dressing the stone, and hauling to the ground 12 miles, we find there is another loss in building owing to having to cut up the stone to fit into the narrow and intricate spaces between Ohio stone quoins. This amounts to 10 per cent. The actual cost of building is also greater than that of limestone, owing to its greater hardness, which is particularly noticeable in the irregular work over the lower windows.

The price already allowed is 21 cents, assuming that 4 cents or  $\frac{1}{4}$ ¢ was allowed as profit, there would remain 17 cents as the cost of quarrying and delivering, of which  $13\frac{1}{2}$  cents would be absorbed in delivery, as the distance is 12 miles, and teams can only make one trip per day, on which the tolls are 25 cents.

This would leave for quarrying only  $3\frac{1}{2}$  cents per foot. But as we proved in our statement to Mr. Page that our expenses in quarrying amounted to (\*) . . . . . \$14.96

(*) Stone costs in Ohio . . . . .	30 cts. per cub ft.
Lake freight $3\frac{1}{2}$ per ton . . . . .	25
Insurance and agency . . . . .	5
Prescott to Ottawa . . . . .	10
Hauling on hill . . . . .	3
Quarrying, handling and repairing tools . . . . .	10

Actual cost . . . . . 83 cts.

We have been allowed contract and extra about average 43 cts. shewing a loss of 40 cts. per foot which on 60,000 feet up to Augt. 1861, is \$24,000 and on cutting about \$20,000 more say \$44,000. In order to make up this there would have to be a profit of \$2 per cub foot put on 20,000 feet of extra stone making \$2 83 per foot which as we state above would appear "absurd."

Per quarry toise of 216 feet . . . . .	7 cents per foot.
To which should be added for quarry right, cost of shanties, superintendence, making roads &c. . . . .	3 " " "
Teaming as before . . . . .	13½ " " "
	<hr/>
	23½ " " "

as the actual cost of delivering the material on the ground in the rough.

After this all the beds and joints had to be cut before.

We should be paid for cutting, 12 cents per foot, and the waste in cutting 44 per cent on 24½ is 11 cents.

We have then as before . . . . .	23½ cts.
Waste in cutting . . . . .	11
Cost of " . . . . .	12
	<hr/>
	46½
Add waste in building 1½% . . . . .	4½
	<hr/>
	51
Add profit 1½% . . . . .	10
	<hr/>
	61 cts.

From which should be deducted the lime stone originally called for, but not built.	7 cts.
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Giving as a proper price . . . . .	54 cts. per foot.
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#### 6. Ohio stone.

The same argument which has been used in regard to brick and masonry applies to Ohio stone, and the labor thereon. We could have delivered the amount of stone originally required last year when lake freights were but 1 7/8 per ton from Cleveland to Prescott; since then we have paid as high as \$3.75.

Also in order to get so large an amount of stone ready for use in a limited time, it has been necessary to pay higher wages to cutters; after all our efforts we have not been able to get the stone cut fast enough, and our whole work has been retarded thereby, as we can easily prove. Thus the extra amount of cut stone has affected the cost not only of what is extra, but of what is contract, and we have a fair claim to be paid accordingly.

The prices heretofore allowed for Ohio stone not only do not cover this loss, but are also entirely insufficient in themselves. We have been allowed as follows :

Ohio stone in rough cub ft . . . . .	80 cts.
Plain-face labor sup. ft. . . . .	26
Sunk " " . . . . .	34
Moulded-circular . . . . .	50

which we need hardly say does not cover the first cost to ourselves.

We consider that we are entitled to « fair current rates » and in addition something towards recompensing us for the loss we have sustained on our cut stone, in consequence of departure from original specification ; we say « towards » recompensing us, for if prices were put on enough to fully recompense us, they would be so large as to appear absurd.

We claim for Ohio stone delivered in rough cub ft. . .	\$1.50
Labor plain-face . . . . . sup. ft. . .	50
" moulded or sunk . . . . . " . . .	75
" sunk-circular. . . . . " . . .	1.00
" moulded-circular. . . . . " . . .	1.10
" chamfered . . . . . " . . .	75
" rubbing . . . . . " . . .	14
" mitres, each . . . . . " . . .	50

Brockville stone to be measured the same as Ohio has been done, the extra labor affecting the less cost.

Blue stone for steps and landings delivered in rough cub ft.	1.75
Deduct contract Ohio. . . . .	.45

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\$1.30

For labor add  $\frac{1}{2}\%$  to Ohio stone.

#### 7. Ornamental iron.

By our specification we were directed to put in our tender the sum of \$1200 for ornamental iron « terminals » upon towers, and \$3 per running foot for cresting. The number of feet of cresting is 2634 at \$3.

\$7902  
Add 1200  

---

\$9102

We will agree to make all the ornamental iron work that may be required

about the buildings for 60 cts. per lb., and at the final settlement a deduction of \$9102 may be made.

#### 8. Fire proofing.

By our contract we were to do all the fire proofing required by the specification for the sum of \$43,918, and no deduction from the contract sum for wooden material omitted. This sum may be decided as follows, taking the actual quantities.

215½ tons rolled iron joists at \$120 . . . . .	25,860
250 steps and landings at \$15 . . . . .	3,750
7949 sup. yards concrete at \$1 75¢. . . . .	14,308

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\$43,918

We are now called upon to put rolled iron beams and concrete upon all extra rooms, also the sizes of some of our contract rooms have been increased, requiring heavier joists; and the ceilings of 2nd story rooms are to be fire proofed.

For this we ask to be paid rolled iron beams per ton \$35.

Rivettted iron girders . . . . . do £55 currency.

Concrete between joists per sup yard \$2 75¢

We ask to be paid these prices for the reason that nearly all the material has to be lifted to the third story, because we have not got the order in time to get the beams this year, and have to put on the roof to put them on without them, which will make it a very awkward and expensive job next spring

#### 9. Miscellaneous.

We will agree to do the following matters for the Architects' estimate, namely :

Boiler house roof . . . . .	\$4354
“ “ floors . . . . .	1512
Setting boilers . . . . .	2997
Felting roofs . . . . .	3150

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\$12013

And according to their specification given to us.

All of which is

respectfully submitted,

(Signed) JONES, HAYCOCK & Co.,  
Contractors.

**No. 123.**

OTTAWA, Oct. 20th, 1861.

H. H. Killaly to  
Thos. McGreevy.  
58303.

SIR,

In reference to your statement to me, that you consider you have well founded claims, to a large amount, against the Department of Public Works, connected with your contract for the Parliament Buildings in this city; I have to request you will be so good as to furnish me with a schedule or statement enumerating these claims, and the grounds upon which you conceive you are entitled to compensation.

I am, sir,

Your obedient servant,

(Signed) H. H. KILLALY.

Mr. Thomas McGreevy,  
Contractor for Parliament Buildings.

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**No. 124.**

OTTAWA, 20th Oct., 1861.

Thos. McGreevy and  
Jones, Haycock & Co.  
to H. H. Killaly.  
58303.

Honorable H. H. Killaly,  
Commissioner, Ottawa Buildings.

SIR,

In compliance with your request that we would put upon paper the various claims to which we have alluded, some of which are not mentioned in the documents submitted to you,—we beg to say;

That in consequence of all materials delivered being priced at the very inadequate rates of the contract-schedule, and in consequence of no distinction being made in many cases between works which are, and those which are not included in contract, thereby applying the same low rates to the latter; and in consequence of many items of work (admitted to be extraneous to contract,) being valued at rates much below the actual cost, we have been, and are thereby deprived of large sums of money justly due us, to our great embarrassment and loss.

That in consequence of the works being so much altered and changed from the original plans, that they have become another thing entirely



from that upon which our tender was based, we are entitled either to have the contracts set aside, and be paid measure and value for the whole works, or else that the clause in the contract which provides that if any « change, alteration or addition shall entail extra expense on the contractors, either in labor or materials the same shall be allowed to the contractors, » shall be carried out in its integrity, as claimed by us in the documents submitted to you. .

That the stoppage of the works by order of the Department on Oct. 1st relieves us from our stipulation to finish the works for a certain sum and by a certain time, and enables us to claim:

1st. Damages for such losses as we can shew we have sustained, by reason of the stoppage.

2d. Prospective profits in case the works are not resumed; or if they are resumed, measure and value for all works done by us hereafter, whether originally included in the contract or not.

In regard to these claims we have taken the best legal advice in the Province, and feel ourselves quite sustained in them.

We would also point out that in case the works are suspended and a final settlement is come to with us, we shall not accept the rates of the contract-schedule, in determining the value of the work admitted by both parties to be included in the original contract; said schedule being, as we have stated before, unfair and unjust to us, and not based upon the contract quantities and gross sum.

In addition to this we would refer you to our numerous complaints, from time to time submitted to the Department of Public Works, of delays caused by want of plans and decisions, and of other matters too numerous to recapitulate.

We are with much respect,

Your obedient servants,

(Signed) JONES, HAYCOCK & CO.  
Contractors Departmental Buildings.

(Signed) THOMAS McGREEVY,  
Contractor for Parliament Buildings.

**No. 125.**

OTTAWA, Oct. 22nd, 1861.

**Thos. McGreevy to  
H. H. Killaly.  
58303.**

SIR,

As you state that you are desirous to know from me distinctly whether in the event of the system of measurement, and schedule of rates for the payment of my work on the Parliament Buildings, which has been under consideration by you, and the Architects, and myself, being adopted: I am willing to waive and abandon all claims which I may consider I have against the Department, on account of past insufficiency of measurement, with holding of payments, etc., etc., etc., and all other claims whatever, arising from causes anterior to this date, as well as all claims for the serious losses I have been put to in consequence of the sudden stoppage of the works, (not justified by my contract) whether I am willing notwithstanding any defeasance of the contract, to complete the works embraced in it for the bulk sum therein stated; I now beg to say distinctly, that I am so.

On the other hand, it is to be distinctly understood that such system of measurement, and schedule of prices, shall apply to all future as well as past work whatsoever, not embraced in the original contract. That so soon as the quantities of work done can be accurately measured and returned, I shall be paid in full for the same, and that the various works involved in the completion of the Building, out offices, etc., etc., etc., so far as they shall be decided on shall be performed by me.

But in the event of the works not being proceeded with from whatever cause, it is to be understood I shall in such case be entitled to compensation, for all such losses I shall prove myself to have suffered by such stoppage.

Your obedient servant,

(Signed) THOMAS MCGREEVY.

Honorable H. H. Killaly,  
Ottawa.

**No. 126.**

OTTAWA, 22nd October, 1861.

H. H. Killaly to  
Thos McGreevy.  
58303.

SIR,

In answer to your letter of this morning, enumerating the several conditions, pro. and con., in which the proposed settlement between you and the Department of Public Works, for the work done and to be done on the Parliamentary Buildings in this city, (not embraced in the contract), is to be based and governed, I beg to say, that I consider them to be exactly in accordance with those agreed on yesterday between you, the Architects and myself.

Yours truly,

(Signed) H. H. KILLALY.

Mr. Thos. McGreevy,  
Contractor for the  
Parliament Buildings.

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**No. 127.**

OTTAWA, Oct. 20th, 1861.

H. H. Killaly to  
Jones, Haycock & Co.  
58304.

GENTLEMEN,

In reference to your statement to me, that you consider you have well founded claims, to a large amount, against the Department of Public Works, connected with your contract for the Departmental Buildings in this city; I have to request you will be so good as to furnish me with a schedule or statement enumerating those claims, and the grounds upon which you conceive you are entitled to compensation.

I am, gentlemen,

Your obedient servant,

(Signed) H. H. KILLALY.

Messrs. Jones, Haycock & Co.,  
Contractor for Departmental Buildings.

No. 128.

OTTAWA, 22nd Oct., 1861.

Jones, Haycock & Co.  
to H. H. Killaly,  
58304.

SIR,

As you state that you are desirous to know from us distinctly, whether in the event of the system of measurement, and schedules of rates for the payment of our work on the Departmental Buildings which has been under consideration by you, and the Architects, and us, being adopted, we are willing to waive and abandon all claims which we may consider we have against the Department, on account of past insufficiency of measurement, withholding of payments, etc., etc., and all other claims whatever arising from causes anterior to this date, as well as all claims for the serious losses we have been put to in consequence of the sudden stoppage of the works (not justified by our contract), whether we are willing notwithstanding any defeasance of the contract, to complete the works embraced in it, for the bulk sum therein stated; we now beg to say distinctly, that we are so.

On the other hand it is to be distinctly understood that such system of measurement and schedule of prices, shall apply to all future as well as past work whatsoever not embraced in the original contract. That so soon as the quantities of work done can be accurately measured and returned, we shall be paid in full for the same, and that the various works involved in the completion of the Buildings, out offices, etc., etc., etc., so far as they shall be decided on shall be performed by us.

But in the event of the works not being proceeded with from whatever cause, it is to be understood we shall in such case be entitled to compensation, for all such losses, we shall prove ourselves to suffer by such stoppage.

Your obedient servants,

(Signed) JONES, HAYCOCK &amp; CO.

Honorable H. H. Killaly,  
Ottawa.

**No. 129.**

OTTAWA, 22nd October, 1861.

**H. H. Killaly to  
Jones, Haycock & Co.  
58304.**

**GENTLEMEN,**

In answer to your letter of this morning, enumerating the several conditions, pro. and con., on which the proposed settlement between you and the Department of Public Works, for the work done and to be done in the Departmental Buildings in this city, (not embraced in the contract) is to be based and governed, I beg to say that I consider them to be exactly in accordance with those agreed on yesterday between you, the Architects and myself.

Yours truly,

(Signed) **H. H. KILLALY.**

**Messrs. Jones, Haycock & Co.,  
Contractors for the  
Departmental Buildings.**

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## No. 130.

Fuller & Jones, on Cost of completing Parliament Buildings.  
\$2306.

## PARLIAMENT BUILDINGS OTTAWA.

## ESTIMATE FOR COMPLETION.

Amount of original contract.	\$348,500.00
“ work done.	185,486.56
To be done under contract	\$163,013.54
1 Completion of main sewer and cold air duct, including ornamental termination to ditto	13,978.00
2 Completion of the warm air vaults and flues, including additional brickwork caused thereby	18,419.25
3 Completion of cold air duct, including ornamental terminations	15,195.00
4 Completion of foul air ducts in basement, and descending flues from houses and flues in walls.	4,634.15
5 Completion of two ventilating shafts over picture gallery, and shaft adjoining library.	12,549.00
6 Construction of horizontal roofs for ventilation	4,125.00
7 Extension of tower	852.82
8 Additional work to library, including flying buttresses to lantern and extra thickness of main wall.	20,000.00
9 Extra cost of altered window frames and sashes	560.00
10 Additional Nepean work and quoins	300.00
11 Alteration to skylights adjoining houses, including improved method of lighting corridors	8,000.00
12 Concrete for ceilings of first floor.	8,250.00
13 Extra cost of grooving and tonguing roof boards.	4,000.00
Exclusive of the cost of wood { 14 Iron roofs over rooms adjoining Houses and library, instead of wood	20,000.00
{ 15 Iron roofs over Legislative Halls instead of wood	50,000.00
16 Iron cresting to roofs, including terminals	27,000.00
7 Completion of boiler house (McGreevy's estimate)	31,000.00
18 Marble pillars in Members lobbies	1,087.00
19 Carving to cornice of Legislative Halls	6,400.00

20 Completion of sewerage to east, to join sewer of Departmental buildings. . . . .	1,200.00
21 Levelling site forming terraces with retaining walls, and ornamental iron railing (in front) to river . . . . .	17,050.00
22 Fixing iron registers and frames before coils, iron doors &c. . . . .	4,232.00
	<hr/>
	\$431,844.76
Contract for Heating and ventilating . . . . .	\$37,329.00
Work done . . . . .	18,738.00
	<hr/>
To be done . . . . .	18,591.00
Cast iron boiler fronts . . . . .	600.00
Cast iron pipe for smoke flue . . . . .	2,600.00
Stays for fixing do . . . . .	430.00
Wrought iron doors and frames. . . . .	480.00
Sliding do for cold air ducts . . . . .	280.00
	<hr/>
	\$454,825.76

(Signed) FULLER & JONES,  
Architects.

Montreal, 15th march 1862.

### No. 131.

Stent & Laver on Cost of completing Departmental Buildings,  
58305.

### ESTIMATED COST OF COMPLETING THE DEPARTMENTAL BUILDINGS OTTAWA.

Amount of contract for buildings . . . . .	\$278,810.00
Amount certified on account to December 1861 . . . . .	129,151.70
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	149,658.30

#### ADDITIONAL WORKS IN PROGRESS.

Extension of east wing, eastern block . . . . .	
Extension of north return, western block . . . . .	
Completing tower, west front, eastern block . . . . .	
Additions and alterations north eastern wing, western block . . . . .	

Two Additional extracting shafts, with internal smoke flues of brickwork . . . . .	
Two similar extracting shafts and smoke flues enlarged.	
Chimneys above roofs, enlarged and a raised, with flues for additional rooms in basements . . . . .	
Additional height to three towers . . . . .	
Increased value of masonry and cut stone windows of principal tower. . . . .	
Croggons patent felt roofing and fire-proof painting to same, instead of tar and gravel on flats of roofs..	
Croggons patent felt for completing roofs under slating..	
Constructing boiler house roofs, as per drawing and estimate . . . . .	
Nepean stone facing to external walls. . . . .	
Fire proofing attic floors as per specification and estimate..	
Setting boilers and finishing boiler houses as do . . . . .	
Finishing smoke and ventilating flues inside . . . . .	
Finishing internal air ducts, with paving and perforated Potsdam stone slabs for warm air vaults . . . . .	
Finishing brickwork of warm air vaults . . . . .	
Constructing ventiducts in roofs, in arched brickwork, with concrete floor on iron joists. . . . .	
Value of doors and architraves as altered to suit windows . . . . .	
Value of double windows and frames and glazed sashes throughout buildings, with additional architraves required by contract for heating and ventilation . . . . .	
	15,600.00
Amount of contract for heating and ventilation . . . . .	\$23,956.00
Paid on account . . . . .	14,769.05
	<hr/>
	9,186.95

## ADDITIONAL WORKS ORDERED..

- 4 Cast Iron boiler fronts complete, with valves, guages &c . . . . .
- 26 Wrought-iron doors and frames, leading into warm air vaults. . . . .



24 Wrought-iron sliding doors to cold air ducts . . . . .	
8 Wrought-iron doors for chimneys & ventilating shafts	
4 Cast-iron smoke flues, terminations &c . . . . .	

4,560.00

## PROPOSED ALTERATIONS AND ADDITIONS TO BUILDINGS.

Preparing rooms in attics for exhibition of plans &c., in Crown Lands and Board of Works department . . . . .	
Additional stone staircases for same, complete with railing, balustrade &c . . . . .	
Altering rooms in ground and first floors in Inspector General and Crown Lands departments, adding girders &c. to support iron joists and floor . . . . .	
Finishing basement rooms in Postmaster General department for additional office room . . . . .	
	13,400.00
Probable cost of bells, gas, and tubing. . . . .	12,000.00
Architects commission, superintendence and contingencies . . . . .	42,000.00
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	\$372,394.25

(Signed) STENT & LAVER,  
Architects.

Ottawa, March, 25th 1862.

APPROXIMATE ESTIMATE FOR EXTERNAL WORKS ACCORDING TO PLAN LAID DOWN AND ADOPTED BY COUNCIL, TOGETHER WITH OTHER WORKS CONNECTED WITH DEPARTMENTAL BUILDINGS.

Cast iron tubular continuation of sewers down to river, western block . . . . .	
do do Eastern block to side of locks. . . . .	
Continuous stone sewer from side of locks to river, eastern block . . . . .	
Cast iron tubular outfall of sewers to meet current of river . . . . .	
Levelling grounds, grading roads, surface drainage, gratings &c . . . . .	

Rubble stone front boundary wall with Nepean stone facings, Ohio stone copings and base, and wrought iron railing throughout, with 3 pairs wrought iron entrance gates, piers &c . . . . .	
Rubble stone terrace and side walls, Nepean stone facing, forming quadrangle, Ohio stone coping and base, with drinking fountain terminations, 3 tiers granite steps to ditto, leading to upper terrace. .	
Rubble stone east and west boundary walls, Nepean stone facing and Ohio stone coping . . . . .	
Air ducts outside of buildings, with Ohio stone ornamental termination, as required by contract for heating and ventilation . . . . .	
Granite steps to entrances, with retaining walls, Ohio stone coping, lamps, piers &c . . . . .	
Additional wrought iron work, terminals to towers cresting, stauncheons, saddle bars &c . . . . .	
Rubble stone areas, with Ohio stone copings, paving, Neapean stone facing, wrought iron area gratings, railings &c. . . . .	
Entrance lodge for gate keeper . . . . .	
Furnishing offices, fittings &c., probable cost . . . . .	30,000.00
Water supply, probable cost. . . . .	40,000.00
Add 10 per ct. for contingencies. . . . .	26,390.00
	<hr/>
	\$290,290.00

*Note.*—If Trenton lime stone is substituted for Nepean stone facing, a saving will be effected of about Twenty-three thousand (\$23,000) dollars.

(Signed)      STENT & LAVER,  
Architects.

Ottawa, March 24th 1862

**No. 132.** Progress Estimate of work done, and materials delivered for the Parliament Buildings at Ottawa, by Mr. Thomas McGreevy, contractor, during the months of October and November, 1861.

H. H. Killaly to  
Sec. of Public Works.  
58424.

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ON CONTRACT.				Total value.
		Quantity.	Schedule price.	Value.		
153	Amount of previous estimates, items Nos. 1 to 77..... Ohio stone in block..... per ft. cube. Total of contract work.....	9836	.45	185486.46 4426.20		189912.66
	EXTRA.	Quantity.	Actual price.	Value.		
154	Amount of previous estimate, items Nos. 78 to 82.....			46917.46		
155	Rolled iron joists as per order..... per ton. Account rendered E, for labor and materials in protecting the building from damage during winter... Total of extra work.....	185	140.00	25900.00 3945.05		76762.51
	HEATING AND VENTILATION.					
156	Amount of previous estimate, items Nos. 83 to 152..... Account rendered E, for temporary floor in boiler-house and temporary covering to steam-pipes..... Total of additional works, and works connected with heating and ventilation .....			419087.63 357.72		419445.35 686120.52 68612.05 617508.47 586342.40 31166.07
	Drawback retained .....					
	Amount of this and former certificates .....					
	Amount of previous certificates.....					
	Amount to be paid on this certificate .....					

*Note.*—Account E.

## PARLIAMENT BUILDINGS, OTTAWA.

Account of work done and materials delivered, by Mr. Thomas McGreevy, in protecting the Parliament Buildings, Ottawa, from damage during the winter.

185400 feet, 1 inch boards and scantling.....	per 1000 feet	@ \$10.00	1854.00
1750 lbs. nails.....	per lb.	“ .06	105.00
190 days, foremen carpenter.....	per diem	“ 3.00	360.00
618½ “ carpenters.....	“	“ 2.00	1237.00
41 “ foremen laborers.....	“	“ 1.40	57.40
234 “ laborers.....	“	“ 1.10	257.40
24½ “ double teams.....	“	“ 3.00	74.25
			3945.05

*Note.*—Account F.

## PARLIAMENT BUILDINGS, OTTAWA.

Account of work done and materials delivered, by Mr. Thomas McGreevy, in laying temporary floor in boiler-house and temporary covering to steam-pipes.

18460 feet, 1 inch boards and scantling.....	per 1000 feet	@ \$10.00	184.60
97 lbs. nails.....	per lb.	“ .06	5.82
2 pairs hinges.....	“	“ .20	.40
4 days, foremen carpenters.....	per diem	“ 3.00	12.00
59½ “ carpenters.....	“	“ 2.00	119.00
19 “ laborers.....	“	“ 1.10	20.90
5 “ double teams.....	“	“ 3.00	15.00
			357.72

*NOTE.*—All work must be returned in the estimate for the month in which it was performed.

We hereby certify that the above estimate is correct.

(Signed) JOHN BOWES, Measurer.

(Signed) FULLER & JONES, Architects.  
HAMILTON H. KILLALY.

Dated the Twelfth day of March, 1862.

## No. 133.

H. H. Killaly, to  
Secy, of Public Works,  
58435.

## EASTERN BLOCK.

PROGRESS ESTIMATE of work done and materials delivered for the Departmental Buildings at Ottawa, by Jones, Haycock & Co., contractors, to the 1st. day of December, 1861. Based upon the rates of prices and principles of measurement for past and future works, arrived at and approved of by the Hon. H. H. Killaly.

No. of item.	DESCRIPTION OF WORK DONE, OR OF MATERIALS DELIVERED.	ON CONTRACT.			Total value.
		Quantity.	Schedule price.	Value.	
1	Earth excavation to original line of footings .....	8604	.21	1806.84	
2	Rock, do do .....	404	.52	210.08	
3	Rubble masonry in walls.....	9372	1.75	16401.00	
4	Nepean stone rubble in safes.....	308	6.00	1848.00	
5	Brick in outer walls.....	433020	7.00	3031.14	
6	do inner do .....	276190	6.30	1739.99	
7	Ohio stone built.....	18737	.45	8431.65	
8	Plain labor on do .....	25079	.12	3009.48	
9	Sunk and chamfered do ... }	1415	.16	226.40	
10	Moulded labor do ... }	2815	.20	563.00	
11	Circular face and moulded.. }	3219	.25	804.75	
12	Carving Ohio stone. ....			1450.00	
13	Rolled iron joints.....	85	100.00	8500.00	
14	Vault doors and frames prepared, (wrought iron) .....	No. 11	200.00	2200.00	
15	Wrought iron cresting prepared .....	757	3.00	2271.00	
16	do roof straps, bolts and chimney bars .....	11617	.12	1394.04	
17	Clear lumber partly prepared for joiners-work .....	53 M.	25.00	1325.00	
18	Pine lumber and plank in roofs.....	150 M.	19.00	2850.00	
19	Centring for arches .....	3708	.07	259.56	

20	12 in. glazed socket pipe drain.....	feet lin.	100	.42	42.00	59439.53
20½	9    "    do    do .....	feet lin.	216	.35	75.60	
MATERIALS DELIVERED.						
21	Ohio, Brockville, Potsdam and blue sandstone .....	feet cu. b.	6500	.45	2925.00	
22	Rubble limestone (quarry toise of 216 feet cu b.) .....		Toise 10	3.00	30.00	
23	Bricks on ground .....	per M.	65	3.50	227.50	
23½	do at kiln on Govt ground .....	per M.	115	3.00	345.00	
24	Lime .....	per bus.	600	.12	72.00	
25	Drift sand .....	yds. cu. b.	1163	.45	523.35	
26	Roofing slates .....	per sq.	390	5.00	1950.00	
27	Plastering laths, (split).....	per M.	150	3.00	450.00	
28	Clear lumber B. M. ....	per M.	200	13.30	2660.00	
29	Common do " .....	per M.	100	10.00	1000.00	
30	Oak in plank and boards B. M.....	per M.	17	25.20	428.40	
31	Milled sheet lead .....	per lb.	17000	.07	1190.00	
32	Rod and bar iron .....	per lb.	12000	.06	720.00	
32½	Rolled iron joists .....	per ton.	10	80.00	800.00	
EXTRA WORK.						
EXTRA.						
			Quantity.	Actual price.	Value.	
33	Ohio stone in quoins (price of limestone deducted) ..	feet cu. b.	3578	1.18	4222.04	
34	Plain labor on do .....	feet supl.	11147	.40	4458.80	
34½	Chamfered do .....	feet supl.	575	.52	299.00	
35	Nepean stone facing to contract walls (price of limestone deducted) .....	feet supl.	53427	.50	26713.50	
36	Nepean stone in bond stones, do do ...	feet cu. b.	6620	.50	3310.00	
37	Nepean stone in templates do do ...	feet supl.	2000	.23	460.00	
13321.25						

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	EXTRA.			Total value.
		Quantity.	Actual price.	Value.	
38	Increased value of masonry in Main Tower.....	1471	6.25	9193.75	
39	do of basement doors.....	600	.20	120.00	
40	do of 1st floor doors.....	No. 9	17.00	153.00	
41	do of 2nd do .....	No. 7	26.50	185.50	
42	do of architrave mouldings and moulded panel linings to be deducted as per schedule .....	900	.83	747.00	
	<b>MATERIALS DELIVERED.</b>				
43	Nepean stone for facing walls.....	425	.42	178.50	
44	Ohio stone .....	940	1.25	1175.00	51216.09
	ADDITIONAL WORKS.	ADDITIONAL WORK CONNECTED WITH HEATING AND VENTILATION.			
		Quantity.	Actual price.	Value.	
45	Earth excavations below original line of footings and in sewers and air ducts &c. ....	3256	.55	1790.80	
46	Hard pan do do do .....	2396	2.50	5990.00	
47	Rock do do do to 5 feet... yds cube.	3347	2.00	6694.00	
48	do do do to 10 " ... yds cube.	3895	3.00	11685.00	
49	do do do to 15 " ... yds cube.	2676	4.25	11373.00	
50	do do do to 20 " ... yds cube.	1031	6.00	6186.00	
51	do do do to 25 " ... yds cube.	620	7.00	4340.00	
52	do do do to 30 " ... yds cube.	277	8.00	2216.00	

53	Filling from spoil bank, including ramming.....	yd. cube.	5943	.75	4457.25
54	Concrete in foundations.....	yd. cube.	99	3.50	346.50
55	Rubble masonry in walls, sewers, air ducts, &c .....	yd. cube.	10806	6.50	70239.00
56	Block stone in boiler house.....	yd. cube.	689	8.00	5512.00
57	Cut ashlar in boiler house, sewers, and air ducts.....	feet supl.	28572	.40	11428.80
58	Cut arches through walls and in air ducts.....	feet supl.	8018	.35	10824.30
59	Cut arches in inverts and sewers.....	feet supl.	14709	1.75	25740.75
60	Cut ashlar prepared for sewers and ducts.....	feet supl.	25050	.35	8767.50
61	Cut arches for air ducts prepared.....	feet supl.	2166	1.20	2599.20
62	Bricks laid in thickening walls and in additions.....	per M.	2002571	13.80	21604.11
	deduct contract bricks.....		957360	6.30	
63	Cutting to splayed arches, jambs, soffits, and arch work generally in brick.....	feet supl.	9000	.15	1350.00
63½	do do parabolic .....	feet supl.	4000	.20	800.00
64	Ventilating warm air and smoke flues .....	feet lin.	9724	.25	2431.00
65	Corbelling in brick-work for cornices .....	feet lin.	14000	.10	1400.00
66	Gloucester block stone in branch drain.....	feet cube.	256	.30	76.80
67	Circular dished bouchard labor to drain.....	feet supl.	159	.75	119.25
68	Limestone flag for covering drain.....	feet supl.	205	.20	41.00
68½	Hammer dressed facing to drain .....	feet supl.	217	.25	54.25
69	15 in. glazed socket drain pipes.....	feet lin.	128	1.20	153.60
70	9 in. glazed socket drain pipes.....	feet lin.	539	.70	377.30
71	4 in. glazed socket drain pipes.....	feet lin.	156	.40	62.40
72	Nepean stone paving to floors of ducts.....	feet supl.	4619	.25	1154.75
72½	Nepean stone flag covering to flues .....	feet supl.	697	.30	209.10
73	Nepean stone facing to walls .....	feet supl.	11126	.50	5563.00
74	Nepean stone steps, wrought .....	feet cube.	104	1.45	150.80
75	Potsdam stone in relieving arches .....	feet supl.	454	1.00	454.00
76	Ohio and Brockville stone in dressings.....	feet cube.	16352	1.25	20440.00
77	Plain face on do .....	feet supl.	33516	.40	13406.40
78	Sunk do on do .....	feet supl.	5459	.52	2838.68
79	Chamfered face on do .....	feet supl.	1656	.52	861.12
80	Moulded do on do .....	feet supl.	2504	.52	1302.08



No. of item.	DESCRIPTION OF WORK DONE, OR OF MATERIALS DELIVERED.	ADDITIONAL WORK CONNECTED WITH HEATING AND VENTILATION.			Total value.
		Quantity.	Actual price.	Value.	
80 <sup>1</sup>	Gothic moulded	1188	1.00	1188.00	
81	Circular face	403	.50	201.50	
82	Do sunk	1941	.64	1242.24	
83	Do chamfered	2780	.90	2502.00	
84	Do moulded	409	.90	368.10	
84 <sup>1</sup>	Do gothic moulded	903	1.50	1354.50	
85	Rubbing	20561	.09	1850.49	
86	Blue Ohio stone lintels over warm air vaults	30	.75	22.75	
87	Ornamental iron work in finials staunchions, saddle bars, &c.	2070	.45	931.50	
88	Wrought iron in straps, bolts, &c.	2658	.15	398.70	
89	Rolled iron joists	30	140.00	4200.00	
90	Centring to arches, sewers, &c.	13842	.20	2768.40	
91	Scaffolding	.....	.....	5000.00	
92	Amount of day work, as per bills rendered	.....	.....	2479.20	
92 <sup>1</sup>	Bills for temporary roofing	.....	.....	2632.00	
92 <sup>1</sup>	Carving in Ohio stone	.....	.....	1000.00	
<b>MATERIALS DELIVERED.</b>					
93	Ohio, Brockville, and blue sandstone	2622	1.25	3277.50	
94	Nepean facing	.....	.42	.....	
95	Nepean flags	200	.25	50.00	
96	Gloucester limestone	225	.30	67.50	
97	Rubble limestone	7	5.00	35.00	
98	Drift sand	900	.45	405.00	
99	Bricks on ground	60	8.50	510.00	

994	Bricks at Kiln on Government ground.....	per M.	115	8.00	920.00
100	Lime.....	per bus.	600	.20	120.00
101	Roofing slates.....	per square.	30	8.00	240.00
102	Plastering laths.....	per M.	50	4.50	225.00
103	Common lumber, B. M.....	per M.	41	10.00	410.00
104	Clear lumber, B. M.....	per M.	55	20.00	1100.00
105	Oak lumber, B. M.....	per M.	3	30.00	90.00
106	Milled sheet lead.....	per lb.	3000	.13	390.00
107	Bar and rod iron.....	per lb.	5000	.06	300.00
Carried to western block.....					301319.12
					424295.99

--- Note.—All work must be returned in the estimate for the month in which it was performed.

Dated the eleventh day of March 1862.

We hereby certify that the above estimate is correct.

(Signed)

STENT & LAVER,

Architects.

(Signed)

HAMILTON H. KILLALY.

(Signed)

JONES, HAYCOCK, & CO.

J. H. PATTISON, Measurer of Works.

**WESTERN BLOCK.**

PROGRESS ESTIMATE, of work done and materials delivered, for the Departmental Buildings at Ottawa, by Jones, Haycock & Co., contractors, to the 1st December 1881. Based upon the rates of prices and principles of measurement for past and future works, arrived at and approved of by the Honorable H. H. Killaly.

No. of item.	DESCRIPTION OF WORK DONE, OR OF MATERIALS DELIVERED.	ON CONTRACT.			Total value.
		Quantity.	Schedule price.	Value.	
1	Earth Excavation to original line of footings.....	3702	.21	777.42	
2	Rock do do ..... yards cube.	1072	.52	557.44	
3	Rubble masonry in walls..... yards cube.	6390	1.75	11182.50	
4	Nepean rubble in safes..... yards cube.	224	6.00	1344.00	
5	Bricks laid in outer walls..... per M.	682800	7.00	4779.60	
6	do inner do ..... per M.	207650	6.30	1308.19	
7	Ohio stone built in work..... feet cube.	12429	.45	5593.05	
8	Plain labor on do ..... feet sup.	14328	.12	1719.36	
9	Sunk labor do ..... feet sup.	1748	.16	279.68	
10	Moulded labor do ..... feet sup.	3041	.20	608.20	
11	Circular face do ..... feet sup.	2014	.25	503.50	
12	Carving Ohio stone.....			734.00	
13	Roll'd iron joists laid..... per ton.	75	100.00	7500.00	
14	Vault doors and frames prepared, (wrought iron)..... each.	No. 8	200.00	1600.00	
15	Wrought iron cresting prepared..... feet lin.	757	3.00	2271.00	
16	Wrought iron roof straps, bolts and chimney bars... per lb.	4762	.12	571.44	
17	Clear lumber partly prepared for joiner's work..... per M.	53050	25.00	1326.25	
18	Pine lumber and planks on roofs..... per M.	171	19.00	3249.00	
19	Centring for arches..... feet sup.	2321	.07	162.47	

9" glazed socket drain pipe laid.....		146	.35	51.10
Syphon traps..... each.		No. 2	2.00	4.00
<b>MATERIALS DELIVERED.</b>				
22	Ohio, Potsdam, Brockville and blue sand stone.....	6000	.45	2700.00
23	Rubble lime stone, quarry toise of 216 feet cube.....	50	3.00	150.00
24	Roofing slates.....	260	5.00	1300.00
25	Bricks delivered on ground.....	80	3.50	280.00
25½	Bricks delivered at kiln on Government ground.....	25	3.00	75.00
26	Lime.....	700	.12	84.00
27	Drift sand.....	1600	45.00	720.00
28	Plastering laths.....	180	3.00	540.00
29	Clear lumber B. M.....	150	13.30	1995.00
30	Common lumber B. M.....	95	10.00	950.00
31	Oak in plank and boards B. M.....	9	25.20	226.80
32	Sheet lead.....	11380	.07	796.60
33	Rod and bar iron.....	17522	.06	1051.32
33½	Rolled iron joists delivered.....	5	80.00	400.00
<b>EXTRA WORK.</b>				
34	Ohio stone in quoins (lime stone deducted).....	2905	1.18	3427.90
35	Plain labor on quoins.....	7330	.40	2932.00
35½	Chamfered do quoins.....	425	.52	221.00
36	Nepean facing to contract work (lime stone deducted).....	51808	.50	25904.00
37	Nepean stone in bond stones (lime stone deducted).....	6500	.50	3250.00
38	Nepean stone in templates (lime stone deducted).....	1800	.23	414.00
39	Riveted girders (wrought iron).....	1395	220.00	136.99

No. of item.	DESCRIPTION OF WORK DONE, OR OF MATERIALS DELIVERED.	EXTRA.			Total value.
		Quantity.	Actual price.	Value.	
40	Increased value of basement doors..... feet sup.	600	.20	120.00	
41	do do 1st floor windows ..... each.	No. 9	17.00	153.00	
42	do do 2d do do ..... each.	" 7	26.50	185.50	
43	do do architraves mouldings, moulded and panelled linings to windows, to deduct as per schedule..... feet sup.	900	.83	747.00	
	<b>MATERIALS DELIVERED.</b>				
44	Nepean stone..... feet sup.	514	.42	215.88	
45	Ohio stone..... feet cub.	20	1.25	25.00	37732.27
	<b>ADDITIONAL WORKS.</b>				
		ADDITIONAL WORK CONNECTED WITH HEATING AND VENTILATION.			
		Quantity.	Actual price.	Value.	
46	Earth excavation below original line of footings, and in sewers..... yards cube.	1868	.55	1027.40	
47	Hard pan do do ..... yards cube.	5570	2.50	13925.00	
48	Rock do do 5 feet deep..... yards cube.	3853	2.00	7706.00	
49	Rock do do 10 feet deep..... yards cube.	5903	3.00	17709.00	
50	Rock do do 15 feet deep..... yards cube.	4398	4.25	18691.50	
51	Rock do do 20 feet deep..... yards cube.	1817	6.00	10902.00	
52	Rock do do 25 feet deep..... yards cube.	945	7.00	6615.00	
53	Rock do do 30 feet deep..... yards cube.	171	8.00	1368.00	

54	Filling from spoil bank, including ramming.....	yards cu be.	4112	.75	3084.00
55	Concrete in foundations, etc., etc.....	yards cu be.	14	3.50	49.00
56	Rubble masonry in walls, air ducts, etc.....	yards cu be.	7845	6.50	50992.50
57	Block stone in boiler house.....	yards cu be.	791	8.00	6328.00
58	Cut ashlar in boiler-house, sewers, air ducts, etc.....	feet super.	26877	.40	10750.80
59	Cut arches through walls and in air ducts.....	feet super.	6202	1.35	8372.70
60	Cut arches and inverts in sewers.....	feet super.	12131	1.75	21229.25
61	Cut ashlar prepared for sewers and ducts.....	feet super.	13168	.35	4608.80
62	Cut air duct arches prepared.....	feet super.	664	1.20	796.80
63	Bricks laid in thickening, walls and in addition per M. \$1674,110  \$13 80  \$23,102 71. }				18358.44
64	Deduct contract Cutting to splayed arches, jambs and soffits, and arched brickwork .....				
64½	Facing to parabolic arches.....	feet sup.	10907	.20	2181.40
65	Ventilating warm air and smoke flues.....	feet sup.	900	.30	270.00
66	Corbelling in brick work for cornices.....	feet lin.	9487	.25	2371.75
67	Nepean stone paving to floors of ducts.....	feet lin.	20000	.10	2000.00
68	Nepean stone facing.....	feet sup.	8069	.25	2017.25
69	Nepean stone steps wrought.....	feet sup.	3394	.50	1697.00
70	Potsdam stone relieving arches.....	feet cu be.	260	1.45	377.00
71	Ohio stone in dressings .....	feet sup.	200	1.00	200.00
72	Plain labor to do .....	feet cu be.	10515	1.25	13143.75
73	Sunk do do .....	feet sup.	22185	.40	8874.00
74	Chamfered do do .....	feet sup.	3737	.52	1943.24
75	Moulded do do .....	feet sup.	1896	.52	985.92
75½	Gothic moulded do do .....	feet sup.	2609	.52	1356.68
76	Circular face do do .....	feet sup.	372	1.00	372.00
77	Do sunk do do .....	feet sup.	428	.50	214.00
78	Do chamfered do do .....	feet sup.	1038	.64	664.32
79	Do moulded do do .....	feet sup.	1682	.90	1513.80
79½	Do gothic moulded do.....	feet sup.	55	.90	49.50
			452	1.50	678.00

No. of item.	DESCRIPTION OF WORK DONE OR OF MATERIALS DELIVERED.	ADDITIONAL WORK CONNECTED WITH HEATING AND VENTILATION.			Total value.
		Quantity.	Actual price.	Value.	
80	Rubbing..... feet suppl.	2485	.09	223.65	
81	Wrought ornamental iron-work in staunchions, saddle bars, finials &c..... per lb.	3352	.45	1508.40	
82	Wrought iron in straps, bolts, &c..... per lb.	1300	.15	195.00	
83	Rolled iron joists, laid..... per ton.	10	140.00	1400.00	
84	Roof timbers and plank fixed, B. M..... per M.	14246	50.00	712.30	
85	Centreing to arches, sewers, hot air vaults, ducts, &c... feet suppl.	12304	.20	2460.80	
86½	Carving in Ohio stone .....	.....	.....	300.00	
86	Scaffolding.....	.....	.....	3500.00	
87	Amount of day work, as per bills rendered.....	.....	.....	1132.22	
87½	Do acct. for temporary roofing.....	.....	.....	5264.00	260120.17
MATERIALS DELIVERED.					
88	Ohio, Potsdam and blue sand stone .....	800	1.25	1000.00	
89	Nepean stone facing..... feet cube.		.42		
90	Nepean flags .....	750	.25	187.50	
91	Rubble limestone..... feet suppl.	15	5.00	75.00	
92	Drift sand .....	120	.45	54.00	
93	Bricks on ground .....	100	8.50	850.00	
93½	Bricks at kiln on Government ground .....	200	8.00	1600.00	
94	Lime .....	1000	.20	200.00	
95	Roofing slates..... per bush.	8	8.00	64.00	
96	Plastering laths..... per square.	20	4.50	90.00	
97	Common lumber, B. M..... per M.	5	10.00	50.00	
98	Clear do B. M..... per M.	50	20.00	1000.00	
99	Oak do B. M..... per M.	5	30.00	150.00	

100	Milled sheet lead .....	per lb.	3000	.13	390.00
101	Rod and bar iron.....	per lb.	6000	.06	360.00
	Amount of Eastern block.....				
	Drawback retained.....				
	Amount of this and former certificates.....				
					6070.50
					361313.86
					424295.99
					785609.85
					78560.98
					707048.87

**NOTE.**—All work must be returned in the estimate for the month in which it was performed.

**Dated the eleventh day of March 1862.**

**We hereby certify that the above estimate is correct,**

**(Signed)**

**STENT & LAVER, Architects.**

”

**JONES, HAYCOCK & Co,**

22

**HAMILTON H. KILLALY.**

99

**J. H. PATTISON, Measurer of works.**



No. 134.

TORONTO, 16th April 1862.

H. H. Killaly to Secretary of  
Public works,  
58436,

T. TRUDEAU, Esq.,

SIR,

In further reference to the subject of the Public Buildings at Ottawa, I have now the honor to transmit an estimate in duplicate, of all work and materials at the Parliament Block, up to 1st of December last.

Also, an estimate in duplicate of all work and materials at the Departmental Block, up to the same date, at which period the works necessary to save these structures from the effects of the winter were completed.

I also forward an estimate, carefully prepared by the Architects, and checked by me as far as possible, of the cost of completing the several buildings, and forming the lands around them, including the approaches, fencing, gates, &c , &c.

The value of the work and materials, at the Parliament Buildings, up to 1st December 1861, according to the rates mutually agreed on, is :—

McGreevy, contractor, . . . . .	\$686,120.53	
Add proportion Garth's contract. . . . .	20,401.23	
	<hr/>	\$ 706,521.76
Do do at Departmental buildings, to 1st December, Jones & Co. contractors, . . . . .	785,609.85	
Add proportion Garth's contract. . . . .	16,769.05	802,378.90
	<hr/>	<hr/>
		\$ 1,508,900.66

To complete Parliament Buildings is estimated by the Architects at . . . . .	\$454,825.76	
Departmental Buildings, . . . . .	372,394.25	
External work, . . . . .	267,290.00	
	<hr/>	1,094,510.01

## ABSTRACT.

Value of work and materials to 1st December 1861, . . . . .	1,508,900.66
Estimated sum to complete the buildings, . . . . .	827,220.01

(Of this estimate sundry work might be postponed to the value of \$68,000.)	<hr/>
Full cost of buildings, . . . . .	2,336,120.67

Cost of external works, estimated by the Architects, as forming, levelling, fencing, approaches, gates, &c., &c.	267,290.00	
	<hr/>	2,603,410.67

(Of this amount the whole might be postponed except a sum to form an approach to each of the buildings say \$20,000, saving 247,290.00.)

Probable amount that might be deferred. \$ 315,290.00

From the foregoing in connection with the various documents previously furnished by me, a correct and reasonable opinion, can, in my judgment be formed, as to the state and cost of the work done, and of the amount which will be required, to finish the buildings in a style, corresponding with the plans adopted.

The great excess of the expenditure over the appropriation, has been incurred, chiefly upon carrying out the system of heating and ventilation adopted, but whatever difference of opinion may be entertained, as to the necessity for it, the works of the various details connected with it, are much too far advanced, to render their suspension, a matter to be thought of; as, were they now stopped not only would all the past outlay on them, be thrown away, but considerable expense would have to be incurred, in closing up the various flues and air ducts, &c., &c., and in sundry alterations involved therein.

Another source of very considerable extra outlay, (but one which cannot be regretted) has been the obtaining of much greater security from fire, than had been originally intended; and the unforeseen nature and singular dip of the rock, on which the buildings stand, was also a further cause of expenditure that could scarcely have been expected.

The progress made in the works of the Departmental Buildings is such, that I see no reason why, (with due exertion) they cannot be ready for occupation, in August 1863.

The Parliament Buildings (not embracing the finishing of the Library) can be made available for the transaction of business, by the first of September 1864.

Nothing has, as yet been done, towards the erection of a residence for the Governor General.

I believe the delay has been owing to the doubts very generally entertained, as to the expediency of placing it upon the strip of land im-

mediately adjoining to, and east of the locks, to which there are certainly many objections.

Being aware of the existing dissatisfaction, at the unexpectedly large cost of these works, I feel it due to myself in reference thereto, to make a few remarks explanatory of my connection with them ; more particularly, from my having been a party in the late settlement to the increase of prices for extra and additional works, beyond those at which the works under Contract had been taken.

It is doubtless a practice much to be condemned, but becoming very general of late years, whenever there are Public Works to be let out for execution, parties come forward and tender for them, at prices, much below those that would afford a reasonable remuneration, in return for the time and skill of the contractor.

This I attribute, in a great measure to the comparatively small amount of Public Works embarked in latterly, and to the over competition consequent thereon.

Parties in their anxiety to obtain a contract, are induced to bid a prices much below the value of the work, trusting to be enabled to secure themselves, somehow, in the performance of extra, or additional work, at paying prices.

That the contractors in the present instance are not free from this charge, must, I think be admitted.

The Public Buildings in Ottawa were far advanced when I was first called upon (in October last) to visit them, in consequence of the differences that had arisen between the contractors and the officers of the Department, the former complaining of insufficient measurements, delay and inadequacy of payments, contract work not being clearly returned distinct from extra or additional work, and particularly against the rates returned in the monthly estimates of the latter.

Under these circumstances, the Honorable the Commissioner of Public Works required me, as an unbiassed party, and one not previously mixed up in the matter, to make an inspection of the works, to make arrangements for the stoppage of them, to report on the best steps to be taken to secure them against the effect of the approaching winter, and to establish reasonable prices for the settlement of the extra and additional work done, or to be done.

In carrying out these instructions, I soon ascertained from a report of the Deputy to the Chief Commissioner, that a schedule of prices, appended to the contracts, and purporting to fix the rates at which the extra work

was to be paid for, was not so intended, but was inserted merely to govern the rates of the progress returns of the contract ; And that this was fully understood between the parties to the contract, at the time of its being signed, and that, for the payment of the extra work, renumeration prices were, elsewhere in the contract, provided for.

I find in the monthly estimates, the extra work returned at prices rated, not by those in the Schedule, but by Officers of the Department, and although these latter were in some cases largely in advance of the Schedule rates, they were not submitted to, or accepted by the Contractors as final.

Under these circumstances, my course was, after examining very carefully into the cost of procuring the materials of the respective kinds, cost of transport, waste, preparation, &c., &c. to fix prices which are, in my judgment so authorized, and reasonable.

The prices, so fixed, refer solely to extra and additional work, and in some of the principal items, correspond as near as may be, with those previously returned by the Officers of the Department ; in most cases they are about a mean, between the rates of such Officers and of the contractors.

The works were wholly stopped by an order from the Officer of the Department, at a few hours notice, and although this was necessarily the consequence of the exhaustion of the appropriation, it was not provided for by the contract, and it laid the Department open to serious claims by the contractors ; who were thereby also relieved from their bond to complete the remainder of the contract, for the bulk sum stated therein.

By the arrangement I made, I took care that the contractors were still bound to perform the whole of the contract work for the stipulated sum, and that they formally agreed to give up all claims to compensation for losses arising from the stoppage of the works, breaking up of their establishments, and by having been prevented from preparing their materials during the winter ; the period in which such work can be done at prices much more favorable, than at any other season.

I am convinced, that by this course a very considerable saving has been effected to the Province, and that the re-letting of the works—besides the loss of another year, would be attended by a large additional cost.

I am of opinion, that the expenditure will not exceed what might reasonably be calculated upon, on works of the magnitude and character of these in course of construction at Ottawa.

The foregoing, with my previous report, and the voluminous documents I have furnished from time to time, will, I trust, put the Honorable the Commissioner in full possession of the state of the works, and all matters connected with them, upon which he required to be informed.

I am, Sir,

Your obt. servt.,

HAMILTON H. KILLALY.

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*See Errata next page.*

# ERRATA.

Page	39, line 6.—For and minor	Read and which minor.
"	43, " 20.— " exnally	" externally.
"	54, last line.— " overhand	" overhead.
"	55, line 30.— " after lead, add, and of such forms and dimensions as may be required.	
"	57, " 23.— " spandrel steps	Add of Ohio stone.
"	81, " 5.— " five feet above	Read five feet thick above.
"	85, —In item No. 83, for red pine	" yellow pine.
"	85, — " 84, for do	" red pine.
"	86, — " 122, \$6. 06	" \$6.
"	87, — " 135, 2. 30	" 2 <sup>10</sup> / <sub>100</sub> .
"	195, line 14.—For 21 inches wrought	" two inches wrought.
"	195, " 21.— " 11 inches	" one inch. .
"	202, " 16.— " eastern	" western.
"	216, " 33.— " feet	" cubic feet.
"	226, " 27.— " \$16,280	" \$16,820.
"	250, " 24.— " allowing extra work	" allowing for extra work.
"	261, " 17.— " 72 cents	" 7 cents.
"	261, " 19.— " cubic feet going	" cubic feet per day going.
"	262, " 11.— " 36,300	" 36,330.
"	264, " 28.— " 41,000	" 41,100.
"	264, " 31.— " 730,000	" 730,300.
"	264, last line.— " 870,000	" 870,300.
"	265, " 19.— " November 30	" November 20.
"	287, " 11.— " \$2.50	" \$2.25.
"	304, " 36.— " overvalued	" overruled.
"	306, " 10.— " plain work rubble	" plain work rubbed.
"	306, " 33.— " 10 and 12	" 10 and 11.
"	315, " 8.— " east work and west	" east north and west.
"	317, " 14.— " and at least	" and in a style at least.
"	318, " 20.— " 18 May	" 4 May.
"	386, 15th line of note at foot.—For $\frac{4}{3}$	" 6 <sup>10</sup> / <sub>100</sub> .
"	399, 3rd line.—For 185,486. 56	" 185,486. 46.
"	399, 15th line, item No. 6.—For horizontal roofs, read horizontal flues in roofs.	
"	399, 30th line.—For item 7, read 17.	

EXECUTIVE COUNCIL OFFICE,

Toronto, 26th August, 1859.

SIR,

I am directed by the Presiding Councillor to transmit to you the enclosed copy of a memorandum of His Excellency the Governor General, and

Have the Honor to be,

Sir,

Your obedient servant,

(Signed,) WM. H. LEE.

Samuel Keefer, Esq.,

Deputy Commissr. Public Works.

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The following Memorandum is furnished to the Public Works Department with a view to the reconsideration of the Reports of the Deputy Commissioner and the Architect, Mr. Rubidge.

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It is impossible to arrive at a conclusion on the relative merits of the designs from the Reports of Messrs. Keefer and Rubidge.

They do not agree as to the order in which the competitors are placed, though they both agree in the selection of three from the whole number.

With regard to the Parliamentary Buildings, the design which Mr. Rubidge places *first* is the second in Mr. Keefer's view and Mr. Keefer's *first* is Mr. Rubidge's *third*.

With regard to the Departmental Buildings they agree in the *first* design but Mr. Rubidge's second is Mr. Keefer's *third*.

It appears to me that the principle on which the merits of the Plans has been estimated is erroneous in one very important respect.

Ten heads or points are set out and ten marks are assigned as the extreme value of each head or point. The aggregate of marks determining the ultimate place of the design.

Now in order to make this mode of reckoning fair, the value of each of the 10 heads or points, ought to be originally agreed—otherwise a candidate who obtained the highest number of marks in the three or

four most important points might find his merits in these particulars cancelled by the set off of an equal number of marks in points of very inferior importance.

The heads or points are as follows :

- 1st. Fitness of plan and interior arrangements.
- 2nd. Economy of construction—cost.
- 3rd. Adaptation to specific local materials.
- 4th. Adaptation to site or position.
- 5th. Adaptation to climate.
- 6th. Economy of warming and ventilation.
- 7th. Lighting.
- 8th. Beauty of design.
- 9th. Conformity with conditions in regard to information, &c.
- 10th. Safety against fire.

I do not think that N°. 2, ought to be one of the points in considering the assignment of the premium, because a specific limit was laid down in the conditions prescribed and if the Architect is within that limit, he would have cause to complain if his design is preferred to another because this other is cheaper.

If any design is probably beyond the prescribed cost it ought to be rejected altogether.—The relative cheapness of any one as compared with another will be a reasonable ground of preference for ultimate execution not for the adjudication of the premium.

Then it seems to me that N°. 1 and 8, are heads which ought to carry with them a larger number of marks than N°. 3, and perhaps than N°. 4, if at least N°. 4, is held to extend to the taste of the buildings in relation to the scenery—a matter vague in itself, but most important with reference to the ultimate selection for execution.

N°. 6, appears to me hardly capable of being measured or judged of in connection with these plans, It ought perhaps to stand « capacity for economical warming and ventilation. »

N°. 9, seems to me wholly out of place. If any design does not comply with the conditions it should be rejected altogether.

I wish the Deputy Commissioner of the Board of Works and the Architect to weigh their remarks, and I would suggest that they should begin by setting aside completely all those designs which do not comply with the conditions or which will probably exceed the prescribed cost.

The next step will be to report *negatively* on the defects of the remaining plans—saying in what each particularly fails.

Their judgment on the relative beauty and convenience of the plans not excluded, will then be most valuable.

The defects may be in trifling matters, and the excellence of any one in important matters may outweigh such defects.

As a matter of course if any design is inconsistent with the locality, that is too large for it, or not adapted to the inequalities and shape of the ground, this ought to exclude it at once. Short of this I think adaptation to the site is a point which must remain over for the ultimate selection of the plan to be preferred for tender.

(Signed,) E. H.

August 25th, 1859.













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